E² Electronic Entertainment

THE ENTERTAINMENT RESOURCE FOR THE INTERACTIVE AGE

DIGITAL ESCAPES!

25 Multimedia Vacations
43 Interactive Books

Buy the Best Modem!

How *LOW* Can You Go?
13 Gross Games

Plus:
Jump Raven, Doom Add-Ons, Monty Python Does Windows, and 20 Hot Game Reviews

May 1994
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You had to walk through three feet of snow just to get to school. They get there on Rollerblade skates. You had an AM radio. They have boom boxes. And now there's this thing called edu-tainment. High technology that makes learning involving, fun and exciting. What a concept.

Introducing the Presario Multimedia PCs from Compaq. Powerful computers equipped with CD-ROM drives and bundles of interactive software that bring state-of-the-art sight, sound and motion to computing. Presario Multimedia PCs come equipped with everything you need to get started. So you can

JUST BECAUSE YOU LEARNED THE HARD WAY DOESN'T MEAN YOUR KID HAS TO.

be up and running right away. And they're backed by a three-year warranty* along with a 24-hour, seven-day-a-week support hotline

to answer any of your computing questions. And with literally thousands and thousands of CD-ROM titles currently available (and

a bunch more coming every day), you can do just about anything. From recreating a space shuttle launch to baking your favorite cake

with Better Homes and Gardens to leafing through an entire set of encyclopedias stored on one six-inch compact disc complete with

audio and video. As a matter of fact, once you have your Presario Multimedia PC at home,

there'll probably only be one thing standing between you and a whole new world. Your kid.

COMPAQ

News and Views

From virtual vacations to booking a trip to Florida, your PC is your passport to the world, page 38.

COVER ILLUSTRATION BY PAUL MORRELL

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The way to a man's stomach is through his computer. Multimaniac, page 72.

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State of the Game

Get Twisted on your new 3DO machine, page 92.

Network Q RAC Rally Road racing never looked better, page 114.

May 1994

Electronic Entertainment

VOLUME 1 • NUMBER 5

Tech Shop

If you can't win, cheat. PC Action Replay builds cheat codes for popular games, page 23.

Big drives can be a heavy load, page 123.

Editor's Page

Gina Smith

Don't Annoy the Natives

I'm from Daytona Beach—so it's no wonder tourists really annoy me. Growing up, I didn't care how many tacky T-shirts or dayglo flip-flops they cashed into the economy. Florida tourists were (and I can only assume they remain) rude drivers, nasty restaurant patrons, and people in the habit of treating my entire hometown as if it existed solely for their pleasure. Of course, they were at least partly right, but had they only done a little research they would've been a lot more bearable—or at least not so obvious. But it wasn't until I grew up and became one of the hated traveling hordes myself that I discovered exactly how hard that is.

Even if going to the beach is relatively easy—just wearing loud clothes, dark shoes, and getting real sunburned seems to do the trick—traveling to more foreign locales can be anything but. To begin with, there are exchange rates, unpredictable weather, electrical outlets, and language barriers to worry about. Also, you don't want to look like an Ugly American, do you? So "Take a Digital Vacation" with *Condé Nast Traveler* staffer Aaron Sugarman on page 38, and find out how you can plan the ultimate hassle-free trip with today's travel-friendly software.

You might consider visiting cities like New York, San Francisco, and Los Angeles, where artists are creating a whole new art form using multimedia and digital technologies. Get a load of talking sculptures, multimedia storytellers, and computer-generated dance in "The Art of Multimedia," by Timothy O'Brien on page 64.

Sometimes, though, you might just want to stay home with a good electronic book. In "Books Without Paper," Rusty Weston explores the growing phenomena of digital literature—novels, coffee-table books, reference works... you get the idea. Pundits have for years been predicting that virtual books will eventually replace the printed kind, but what's it really like curling up with one? Find out on page 46.

And if that's too high-falootin' for you, meet Victor Thumblister—unquestionably *E2*'s most questionable contributor. In "The Gross, The Rude, and the Ugly," Victor (who works a night job at a filling station so he can spend his days watching Oprah and playing the most disgusting games he can dig up) delves into the seamy underside of gaming. A multimedia version of drive-in movie critic Joe Bob Briggs, Victor likes what he sees. Check it out on page 58.

If you haven't lost your appetite, join the MultiManiac in his most tasteful adventure yet. That's right, the MultiManiac is also an accomplished gourmet—and with some of today's best multimedia cooking aids, he whips up the perfect brunch to serve super-model Elle MacPherson. (In your dreams, Mr. Maniac!)

As always, look for the hottest in multimedia and games news, previews and reviews. We check out Commodore's new CD^{32}, play Sid Meier's new masterpiece C.P.U. Bach, commune with environmental software, deliver more than a dozen new game reviews, and much, much more.

Mail

That's a Lot of Beer

I recently picked up a copy of your premier issue and after reading it, promptly sent in my subscription card.

I particularly enjoyed your article "Calling All Games" (February, page 72). I have been an avid online gamer for two years now, and can't agree more with your warning about costs while playing. I spent around $700 in my first two and a half months online. At first, I was in shock over this figure but I don't feel bad about the money I spend online anymore. Some people spend their money at bars, I spend mine online. Of course, I've decided to budget myself.
David Steffek
Milwaukee, Wisconsin

Mortal Thoughts

When is Mortal Kombat coming out for Sega CD? Also, is there a RAM cart coming out for Sega CD?
J.R. Gonzalez
Chicago, Illinois

Mortal Kombat for the Sega CD shipped in March. There is a RAM cart for the Mega CD in Japan. Word is Sega of America is planning to ship a RAM cart in the United States this year. Most companies rely on the RAM resident in the system itself, which can save up to eight Sega CD games.—Ed.

3D(uh)O

Over the past year I heard so many wonderful things about 3DO that I decided to save up the money for the massive $700 price tag. On January 2, 1994, I bought this totally amazing system by Panasonic, and to this day it still blows my mind each time I play it. Recently, I picked up a copy of another magazine, and saw a few articles stating that 3DO was slipping, and may not live up to everyone's high hopes of its future. Please tell me this is not the case.
James Stout
Kinsport, Tennessee

3DO may not be taking the world by storm, but it isn't dead either. Several major companies, including Panasonic, Electronic Arts, Sanyo, and AT&T have sunk considerable cash into the much-hyped multiplayer, and it's not likely that they'll let it fade without a fight. Cheaper, $499 3DO systems are shipping from Panasonic now, and a barrage of titles is under development. Both could help expand the 3DO market considerably.—Ed.

CD³² Wins the Title War

In the Sharp Edge section of your first issue, you address CD platforms, but I think you—and everybody else in the states—is overlooking one important factor: software. No matter how good your hardware is, it's software that makes the machine.

I agree that Atari and 3DO have awesome capabilities. However, the CD³² has the software support to back it up. I own a CD³² with the following titles: Labyrinth of Time, Liberation: Captive 2, Pirates Gold!, Zool, Overkill, Lunar C, Diggers, Oscar, Trolls, Pinball Fantasies, and I just ordered Microcosm.

Let's face it, out of the new machines, nobody comes close to CD³² for software.
Luis D. Reich
England

Software is indeed the clothes that make the machine. But while CD³² can flaunt more discs than most black boxes out there, many of the titles are updated versions of older Amiga and CDTV games that don't take nearly full advantage of the system's capabilities. The true test for CD³² and its competitors will be when the next generation of titles arrive—games optimized for each system's particular strengths.—Ed.

Cheater! Cheater!

I just picked up my first copy of your magazine at a local bookstore. Overall, I am impressed and have sent for a subscription.

I was distressed, however, to read the article "How to Cheat (and Beat) PC Games," by Don Steinberg (February, page 64). I read this article extolling the wonderful virtues of cheating and was glad the kids had not seen it first. "Cheating is as American as mock-apple pie...a painless and victimless path to cheap thrills...it's not whether you win or lose, it's how well you cheat." With crime running rampant, moral standards declining and the general "why work hard when you can cheat" mentality sweeping our society, I find it very distasteful when your magazine has an article like this.
Tom McGrath
Gresham, OR

Critical Laugh

Congratulations on your new magazine. My only complaint is, on the Editorial Page of your first issue you say, "Today's consumers need a publication that can objectively review these products." You're absolutely right, but I'm not sure that your magazine lives up to that promise. Certainly, it would be difficult, as every other page of the magazine is a full-page ad for one of the products. In looking at the "State of the Game" section, there were 15 games reviewed, with only one "6", two "7's", eight "8's", two "9's", and two "10's". This is an 8+ average. Unless you're really lucky with the games you've picked, this has not been my experience. I'm hoping for a magazine that will highlight the bad points as well as the good ones of a game, and give an honest evaluation.

I am hoping that you are that magazine.
Dan Hinsley
via CompuServe

We agree with you. While part of the reason for the relatively high scores was our early attempt to weed out the lower-quality games before they got to print, we understand that readers need to know what's good, what's bad, and what's ugly before they plunk down their cash. You're absolutely right. In our first issue, we reviewed better-than-average games because ... well, just because. But no longer. Check our review sections now, and you'll see a full spectrum of ratings. And watch for more precise scoring explanations in future issues.—Ed.

Got something you want to get off your chest? Do it! Write, fax, or e-mail us at: Letters to the Editor, c/o Electronic Entertainment, 951 Mariner's Island Blvd., Suite 700, San Mateo, CA 94404; fax: 415-349-7781; MCI ID: 619-7340; and CompuServe: 73361, 265.

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NIGHTMARES

BEING

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UT TO.

Popcorn and a CD, Please

Hollywood hopes to close the gap between making the movie and releasing the game from months to minutes…

…avoiding case's like *The Lawnmower Man*, which took nearly two years to make it from silver screen to PC screen.

A s film makers like Paramount, Warner, and Disney add software to their repertoire, the line dividing movies and games gets blurrier. So it probably won't be long before you can go to the theatre to see a movie and pick up its associated game at the same time.

The idea makes sense to Richard Edlund, president of special-effects house turned software maker Boss Film Studios. Not only does he look forward to the day when software titles are sold next to the popcorn; he thinks it may even be inevitable—especially if Boss simultaneously develops effects for both the movie and the game. Edlund, who has received Oscars for his work on such films as *Star Wars* and *Raiders of the Lost Ark*, recently created a multimedia publishing division at Boss that will use some of the studio's moviemaking wizardry to create high-end games.

Meanwhile, Philips Interactive Media is looking to apply the same ideas to home theaters by supplying disc sets that include a CD-based movie and CD-ROM game for the Philips CD-i machine—all in a single package. Now *that's* entertainment. —*Christopher Lindquist*

Viper! The Game

First it was a Chrysler sportscar. Then it was a TV show. And this fall, Cyber-Flix will release Viper as an interactive CD-ROM game. In Viper, Assault on the Outfit, you help hero Joe Astor fight crime with 3-D graphics, actual Viper blueprints, a stereo soundtrack based on the TV characters' voices, and multiple layers of interactive game play. Best of all, you can watch the high-tech hot-rod morph into Defender mode whenever you want. Who could ask for more? (Paramount Interactive; 415-813-8040; CD for DOS/Mac, $69.95)

— *Fredric Paul*

Alien Logic

Fantasy role playing meets science fiction in SSI's upcoming adventure, Alien Logic. Set 3,500 years in the future on the planet Jorune, which is populated by a small enclave of humans and a variety of nonhuman races, you must prevent the unleashing of the ultrapowerful Warp Walker weapon. To complete your peace-keeping mission on this complex world, you'll need a variety of skills, including bioengineering and mastery of magiclike alien technologies. Don't worry, there'll be plenty of good old-fashioned hand-to-hand combat, too.

Billed as the first of a "new wave of role-playing games," Alien Logic is based on the popular Jorune paper role-playing game. It features Super VGA graphics and a gameplay system reminiscent of Prince of Persia and Flashback. Due out this summer, Alien Logic, should be well received by anyone looking for immersion in new worlds and ideas. (Strategic Simulations, Inc.; 800-245-4525; CD for DOS, $60)

—*Rusel DeMaria*

And Now for Something Completely Different...

You'll never look at boring old Microsoft Windows the same way again once 7th Level's Monty Python Flying Circus descends upon the market late this spring. With wacky Pythoneers Terry Gilliam and Terry Jones at the helm, this new CD-ROM title will use original graphics from the 1960s and 70s British television show that made delicious fun of tight-lipped Brits.

"What we're trying to do is bring Monty Python's sense of humor to a computer—where it's desperately needed," says Robert Tercek, 7th Level's creative director and formerly the head of promotions at MTV. "In 1968, when British TV was incredibly stultifying, Python made fun of all the stolid things they were doing. We want to take the same parody and apply it to computers. Windows, after all, is absolutely ripe for parody."
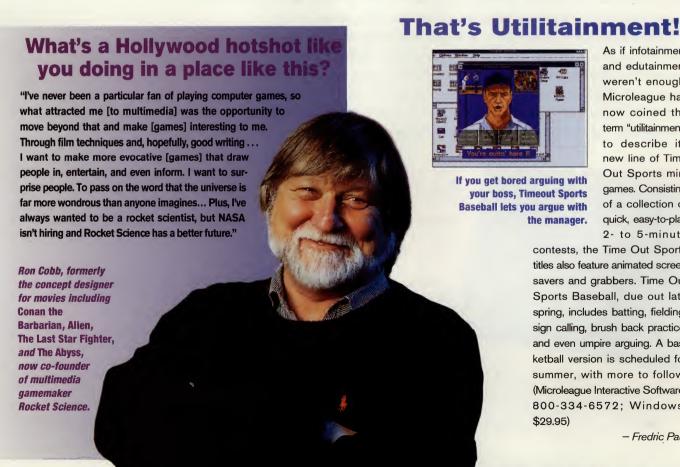
The title, he says, will be more a fun-pack than one particular game: it will incorporate Python-esque screen savers, Windows wall paper, reminders, calendars, and games, all of which will work on top of (and make ruthless fun of) Windows. "We're trying to make it so deep with games and screen savers that you'll keep going back. You'll never run out of things to discover or gags to look at."

Although 7th Level won't incorporate full-motion video in the traditional way, the company will be using high-tech techniques to bring the characters to life through rotoscoping and reanimation. We can't wait to see what they do to Bill Gates. After all, he's the closest thing *we've* got to royalty. (7th Level; 214-437-4858 ext. 2222; CD for Windows)

–*Beth Cataldo*

What's a Hollywood hotshot like you doing in a place like this?

"I've never been a particular fan of playing computer games, so what attracted me [to multimedia] was the opportunity to move beyond that and make [games] interesting to me. Through film techniques and, hopefully, good writing ... I want to make more evocative [games] that draw people in, entertain, and even inform. I want to surprise people. To pass on the word that the universe is far more wondrous than anyone imagines... Plus, I've always wanted to be a rocket scientist, but NASA isn't hiring and Rocket Science has a better future."

Ron Cobb, formerly the concept designer for movies including Conan the Barbarian, Alien, The Last Star Fighter, *and* The Abyss, *now co-founder of multimedia gamemaker* Rocket Science.

That's Utilitainment!

If you get bored arguing with your boss, Timeout Sports Baseball lets you argue with the manager.

As if infotainment and edutainment weren't enough, Microleague has now coined the term "utilitainment" to describe its new line of Time Out Sports mini games. Consisting of a collection of quick, easy-to-play 2- to 5-minute contests, the Time Out Sports titles also feature animated screen savers and grabbers. Time Out Sports Baseball, due out late spring, includes batting, fielding, sign calling, brush back practice, and even umpire arguing. A basketball version is scheduled for summer, with more to follow. (Microleague Interactive Software; 800-334-6572; Windows, $29.95)

– *Fredric Paul*

Doomed

Id Software's Doom has taken the action-game genre by storm.

Well, it's official: Doom isn't just a game anymore, it's a whole new industry. Just a few months after its release, hackers all over the country are frantically creating add-ons that add wilder levels, weird new sounds, more menacing creatures and other toys to your death-defying Doom experience.
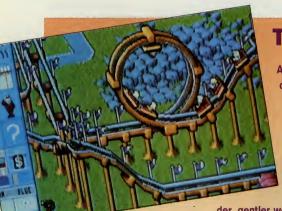
The right tools and cheats can turn a rather dangerous situation...

So what's in it for you? For starters, you can exchange the merely spine-stiffening roars and screams for a set of sounds from "Monty Python" or the film *When Harry Met Sally*. If you're bored with the standard levels, you can use RanDoom to add more monsters and rearrange floors to up the excitement a bit or a bunch.

...into a walk in the park.

And if you're looking for fellow Doom addicts, you won't be disappointed either. On the Internet, there's an entire Usenet newsgroup dedicated to Doom fanatics with hundreds of new messages being posted every week—even including tips for preventing Doom-induced motion sickness. Want to play Doom with human opponents but without the long-distance bills? Then check out the Doom Modem League, where you'll find hundreds of kindred spirits within local calling distance.

Some companies hate it when outsiders butt in and start modifying their game code, but Doom-maker Id Software is taking a more benevolent—if not downright helpful—approach: It's releasing a collection of programming notes and utilities that will allow Doom hackers to more easily modify their favorite firing ground. As for the hackers who are already out there working their magic, "God bless 'em," says Id chief executive Jay Wilbur. Now that's what we call a good sport. (Id Software; 800-434-2637; DOS, $40; Doom Modem League Information; Internet: tomservo@netcom.com)   *—Christopher Lindquist*

Take a Wild Ride

After giving you the chance to play God and wield power in such titles as Populous, Power Monger, and Syndicate, Bullfrog Productions now takes on the kinder, gentler world of roller coasters and cotton candy. In its newest offering, Theme Park, you become an amusement park manager and watch how your decisions affect your employees, your customers, and your business.

Design your park to your own satisfaction, placing pathways, sign-posts, guards, and even sweaty guys in chicken suits at strategic locations. Of course, you also control the all-important rides, attractions, and fast-food kiosks.

But this theme park isn't all fun and games. There's money to be made and lost here, and you compete with other venues in the business side of this simulation. Challenge computer-controlled rivals, take on a friend's creation, or play head-to-head via modem.

Like other Bullfrog products, Theme Park is full of cute, personal touches. It's fun to watch the customers wander around your park. If they're bored, they walk under a rain cloud. If they're frightened, they freak out right before your eyes. So if you can't wait to out-Disney Walt, try your hand at Theme Park when it hits the stores this summer. (Electronic Arts; 800-245-4525; DOS/Mac, CD for DOS/Mac, $59.95)

—Rusel DeMaria

A Renaissance Man in the 20th Century

Mona Lisa smiles at da Vinci's inventions.

Leonardo da Vinci was the original dweeb engineer. Sure, he painted masterpieces like the Mona Lisa, but he was also an accomplished sculptor, architect, and inventor. He sketched designs for many mechanical inventions that later became realities, including helicopters, parachutes, and armored tanks.

Leonardo: The Inventor from InterActive Publishing uses the master's 15th-century drawings as a guide to his inventions, high-lighting the relationship between da Vinci's vision and 20th-century machinery. This educational and amusing CD-ROM arranges his inventions into five categories: weaponry and warfare, civil engineering, music, water, and flight. Each category includes animations that turn da Vinci's sketches into realistic renderings. Click on Leonardo's Words to hear narration about the inventions in the artist's own words. The Our Time section adds video clips of the modern incarnations of Leonardo's devices.

If that's not enough, you also get a biography, a time line, a list of Leonardo's works, a bibliography, and even a few quick games involving Leonardo's creations. Look for Leonardo to emerge on disc in early summer. (InterActive Publishing; 914-426-0400; CD for Windows) —*Beth Cataldo*

What You Want

Earlier this year *E2* asked you what kind of consumer electronics you own. It was no surprise to learn that you're on the cutting edge—most of you already own high-end PCs, CD players, and video cameras. But what surprised us most is what hot new technologies you're thinking about buying next.

HOT NEW TECHNOLOGIES!

INTERACTIVE TV SERVICES	33%
MOVIES ON CD	32%
LASER DISC PLAYERS	23%

Media Vision Gambles On Reno

First there was Memphis, and now comes Reno. Reno is a double-speed CD-ROM drive for your PC or Mac that can moonlight as a portable CD player. Media Vision is making a trend of producing CD-ROM drives that do double-duty as audio CD players.

Reno is a compact, double-speed CD-ROM drive that attaches to either Macs or PCs with a small computer systems interface (SCSI) cable. Once you're done playing with your favorite CD-ROM titles, disconnect the Reno and use it as a portable CD player powered by rechargeable NiCad batteries.

The Reno is available in three configurations: stand-alone, with a sound card, and with a laptop computer connector. Prices range from $399 to $549 depending upon configuration. (Media Vision; 800-845-5870; PC or Mac; $399-$549)
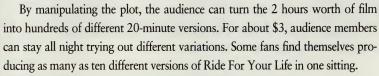
—*Christopher Lindquist*

The Interactive Ride of Your Life

Most interactive movies play on a CD-ROM drive in the privacy of your own home. Interfilm's Ride For Your Life—a story of bicycle messengers racing around Manhattan—turns the concept into a party by letting an entire movie theater vote on what happens next.

Before the movie, a perky master of ceremonies gives a brief explanation of how the system works: Each patron can push buttons on a special pistol grip attached to each seat, and the patented system instantly tallies the votes on the screen.

By manipulating the plot, the audience can turn the 2 hours worth of film into hundreds of different 20-minute versions. For about $3, audience members can stay all night trying out different variations. Some fans find themselves producing as many as ten different versions of Ride For Your Life in one sitting.

"If you only see it once, it's really lame," notes one pistol-grip aficionado. "Once you see it, you want to see what the other choices were." Of course, you've got to get everyone else to go along.

"This is the first movie that says, 'Don't just sit there,'" says Bob Bejan, founder of Interfilm. If you want to see a particular plot twist, you're urged to be vocal about it, convincing other audience members to follow your path or even leaping around the theater to activate as many pistol grips as you can get your paws on.

Look for Ride For Your Life to debut in 50 specially-equipped theaters around the country early this summer. Bejan's company also has a multipicture deal with Sony to create more interactive movies for theater and the interactive TV market.

–Jodi Summers

Need a Break?

Not all computer games come in brightly colored packages stacked on the entertainment shelf. Some games are hidden inside otherwise boring business applications.

Sure, operating systems like Windows and OS/2 ship with solitaire and other games, but that's only the beginning. Did you know, for example, that there are pretty decent games built into Windows word processors?

Word for Windows 6 stashes its Mind Bender game in its set of supplemental macros. Mind Bender is a concentration-style game that pits you against the computer to match various Word icons. It's a surprisingly lively game with multiple rounds of increasing difficulty. To load this user-customizable time waster, simply select it from the program's macro menu.

Ami Pro also hides its game in the macro listings, this time under

Want to play a game without leaving Word for Windows? Try Mind Bender, a built-in concentration-style macro game.

an easier-to-remember name: "Game." Also a match game, this one challenges you to use a process of elimination to figure out which buttons the computer has selected. The game

You get only five chances to guess where the computer has hidden markers behind the white dots in Ami Pro's macro game.

isn't as sophisticated or elaborate as Word's Mind Bender, but it still beats working.

There are lots more hidden games out there–some we know about, some we don't. Send us your favorites–we'll publish the best ones in a future issue.

–Michael S. Lasky

THIS OPPONENT IS PROGRAMMED TO BE CHALLENGING.

this one wants to rip your lungs out.

If you think you're good at games, then let's have some real fun. When you're online with GEnie® Multi-Player Games, you're playing real people, in real time. Some of the best players around the world. □ Splash a bandit in Air Warrior®, and you've just taken out eight other guys, who'll be back gunning for you. Blast a MechWarrior® in MultiPlayer BattleTech™, and who knows? Could be that jerk from the coast. Could be a mercenary who's looking for a few good friends. □ With GEnie, the possibilities are endless, the people

are terrific, and even the prices are competitive. So put some new life into your joystick, and sign on. We'll see just how good you are. □ Sign up now: 1. Set your modem for half duplex (local echo) at 300, 1200 or 2400 baud. 2. Dial toll free — 1-800-638-8369. Upon connection, enter HHH 3. At the U # = prompt, enter JOINGENIE then press RETURN 4. At the key code prompt enter ALE423 5. Have a major credit card or your checking account number ready. □ For more information in the U.S. or Canada, call 1-800-638-9636.

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Leader
BOARD

The best-selling PC, Mac, and CD-ROM entertainment software

Microsoft's perennial flight sim takes off again with Flight Simulator 5.0.

Watch out for the aggressive space aliens in Sim City 2000.

Luke Skywalker isn't the only one who can attack the Death Star.

The Leader Board is a compilation of top-selling software in 1,300 retail stores for December, 1993. Some titles may appear in more than one category. Source: PC Data.

PC GAMES

1 Microsoft Flight Simulator 5.0 With you in the pilot's seat of your choice of four planes, this game flies in at number one for the fourth month in a row. (Microsoft; 800-426-9400; DOS, $64.95)

2 Rebel Assault Intense 3-D visuals and furious action highlight this Star Wars fantasy action adventure. (LucasArts Entertainment; 800-782-7927; CD for DOS, $79.95)

3 The 7th Guest The ghost of Henry Stauf just won't go away in this realistic and haunting drama. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, $99.99)

4 Police Quest IV Former L.A. Police Chief Daryl Gates puts a lot of realism into this gritty addition to the Police Quest series. (Sierra On-Line; 800-757-7707; DOS, $69.95)

5 Star Trek: Judgment Rites Authenticity dominates this latest interactive extraterrestrial adventure. (Interplay Productions; 800-969-4263; DOS, $59.95)

6 Aces Over Europe The scenario is World War II, the missions are many, and the munitions are ready. Put your life on the line to win the war. (Dynamix; 800-757-7701; DOS, $69.95)

7 Leisure Suit Larry 6: Shape Up or Slip Out! The sixth version in the series lives up to the Laffer reputation. This time, Larry's dream comes true—a vacation at a resort full of women. (Sierra On-Line; 800-757-7707; DOS/Windows, $69.95; CD for DOS/Windows, $79.95)

8 SimCity Classic Create your own city and set up residential, commercial, and industrial zones, build mass transit, provide police and fire protection, and set taxes. (Maxis; 800-336-2947; DOS/Windows, $49.95)

9 B-Wing Get even more scenes in the fight against the Empire in this X-wing expansion. (LucasArts Entertainment; 800-782-7927; DOS, $29.95)

10 Wolfenstein 3-D/Spear of Destiny Hitler has control over the most powerful weapon in the world. Only you can retrieve it in this action-paced 3-D adventure. (Formgen; 800-426-3123; DOS, $35)
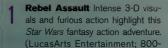
MAC GAMES

1 SimCity 2000 Build a city of the future with this improved version of the classic. (Maxis; 800-336-2947; Mac, $69.95)

2 Myst Stunning visuals, haunting audio, and logical solutions will keep this compelling and revolutionary game on your play list. (Brøderbund Software; 800-521-6263; CD for Mac, $59.95)

3 Chessmaster 3000 Learn the rules of chess and get advice from the masters Karpov and Kasparov. (The Software Toolworks; 800-234-3088; Mac, $49.95)

4 SimCity Classic Create your own city and set up residential, commercial, and industrial zones, build mass transit, provide police and fire protection, and set taxes. (Maxis; 800-336-2947; Mac, $39.95)

5 Microsoft Flight Simulator 4.0 The perennial classic continues to soar on the Mac. (Microsoft; 800-426-9400; Mac, $64.95)

CD-ROM TITLES

1 Rebel Assault Intense 3-D visuals and furious action highlight this *Star Wars* fantasy action adventure. (LucasArts Entertainment; 800-782-7927; CD for DOS, $79.95)

2 The 7th Guest The ghost of Henry Stauf just won't go away in this realistic and haunting drama. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, $99.99)

3 Microsoft Encarta Learning takes on a whole new meaning with multimedia encyclopedias. Experience history with video footage, audio clips, animations, and text. (Microsoft; 800-426-9400; CD for Windows/Mac, $395)

4 Return to Zork The Great Underground Empire gets a new look in this text-free interactive video adventure. (Activision/Infocom; 800-477-3650; CD for DOS, $79.95.)

5 Gabriel Knight: Sins of the Father Tim Curry, Leah Remini, Mark Hamill provide the voices and New Orleans is the setting for this dark tale of the search for redemption. (Sierra On-Line; 800-757-7707; CD for DOS, $69.95)

6 King's Quest VI Travel through an enchanted world of mystery in this royal adventure and love story. (Sierra On-Line; 800-757-7707; CD for DOS/Windows, $79.95)

7 WolfPack The classic World War II naval sim gets a facelift on CD-ROM with 58 new missions and improved animations. (NovaLogic; 800-245-4525; CD for DOS; $39.95)

8 AD&D, Forgotten Realms: Dungeon Hack Spend hours exploring massive and sinister dungeons and destroying evil overlords. (Strategic Simulations; 800-245-4525; CD for DOS, $60)

9 Dracula Unleashed Go neck to fang with the Great Bloodsucker in this horror tale of corpses and vampire brides. (Viacom New Media; 800-245-4525; CD for DOS, $59.95)

10 Might & Magic: World of Xeen Players explore quests, mazes, and plot twists in two interconnected worlds—Clouds of Xeen and DarkSide of Xeen. (New World Computing; 800-325-8898; CD for DOS, $69.95)

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Spotlight

Optica Illusion

If you're looking for cultural diversity and color, Asia is the place to go. But can an arm-chair journey give you a feel for the world's largest, most populated continent?

InterOptica Publishing Limited is giving it a go with a series of interactive CD titles. Ranging from detailed travelogues to such destinations as the Great Wall and Angkor Wat to short montages of life in different parts of Asia, they can give you new perspective on life and times in the East. (For more on travel-related programs, see this month's cover story, "Take a Digital Vacation" on page **38**.)

Journey to the Heart of Japan is a trip on the Nakasendo, a highway built along a 1,250-year-old road. The Nakasendo goes from Kyoto through the proverbial heart of Japan (its central mountains) to Tokyo. Five characters from different historical periods come along for the ride: Kinbei, a samurai warrior (1560); Torazaemon, a shopkeeper's assistant, and Kiku, a homemaker (both 1840); and young Chizuru and her school teacher father (both 1990's).

At every stop along the way the characters offer an insider's view of issues and historical facts. At Kyoto the talk revolves around the building of a 20-story hotel in the central business district. Further down the road, Kiso-Fukushima, a major destination for Buddhist and Shinto worshippers, is a perfect rest stop on the long journey.

Although the video window is small, the stills of the various towns and cities give a sense of the beauty of the Japanese heartland. Screens change slowly, but somehow the effect is more restful than annoying. Journey to Japan is a great way to learn about Japan with depth, context, and clarity.

Astonishing Asia, on the other hand, is anything but restful. The title provides a close-up view of certain exotic Eastern customs, seemingly chosen for shock value. The short documentaries about unusual practices and traditions in different countries add up to a relentless series of excruciating visuals. Mortification of the flesh in every form, including spikes through the tongue and self-flagellation, is only the beginning. At the Monkey God Festival in Hong Kong, for example, the medium falls in a trance, then washes his face in boiling oil and strolls over red-hot coals.

Photographed by the husband-and-wife journalist team of Earl and Nazima Kowall, Astonishing Asia's stills are reproduced flawlessly. The video images, on the other hand, are quite grainy. For those interested in the incredible and the obscure, Astonishing Asia is a wholly intriguing title. (InterOptica Publishing; 800-708-7827; Journey to Japan, CD for Mac, $69.95; Astonishing Asia, CD for Windows/Mac, $49.95)

—Joy Ma

Astonishing Asia lets you look at the unusual through the eyes of the Kowalls.

Travel to Hong Kong's Monkey God Festival in Astonishing Asia.

Unwind while discussing your travels in Journey to the Heart of Japan.

Saving the World

Everyone complains about smog in our cities, hazardous waste in our oceans, ridiculous amounts of product packaging, and the expanding hole in the ozone layer. But what are they actually doing about it?

England's Media Design Interactive has taken the next step in creating **The Big Green Disc**, a CD-ROM title for Windows and Mac that shows our planet's problems, potential solutions, and who you can contact to take further action.

Packaged in recyclable materials (of course), content is what makes this CD-ROM work. Without preaching, it provides detailed descriptions of such problems as the greenhouse effect, the diminishing ozone layer, pollution, and endangered species. After viewing the presentation on the greenhouse effect you'll think twice about the amount of garbage you create: An average American family generates 100 pounds of garbage every week—nearly three tons a year. Try dumping that in your backyard and see how fast it fills up.

What really makes this disc worthwhile is that it shows you what you can do to make a difference. If you're ready to do more than just carpool and recycle curbside, this title is full of great advice . It includes information on alternative energy sources like solar and water power and how to shop for environmentally-friendly products. For instance, it tells you to look for phosphate-free chemicals, to buy products packaged in glass, paper, or metal, and to avoid plastic packaging. (You'll learn that though many plastic products come labeled as recyclable, they're really not.)

Don't expect an astounding multimedia experience, though. Big Green is basically a narrated slide show with supporting photos, graphs, and factoids. On the plus side, this makes navigating through the program so simple that your kids will be able to check it out on their own, making it an excellent choice for schools.

If you start to feel depressed about the shape we're in, just click on Credits from the main menu for a collection of humorous bios on six of the title's developers. These Brits (who hate rave music, slow cars, French films, and fish and like Thai food, "Cheers", juggling, and Linda Purl's eyes) are as quirky as they are socially responsible. (Sony Electronic Publishing; 011-44-252-737630 (UK); CD for Windows/Mac, $69)

—Donna Meyerson

The Big Green Disc shows you what's good, bad, and ugly about our threatened planet, and what you can do to help.

Confront the ugly facts about pollution in The Big Green Disc.

Give Your Joystick Some Body English

You say your joystick can't find a place to live on that cluttered desk of yours? Maybe what it needs is a mobile home. And there are now at least two products—Armchair General's **MousLounge** and California Pacific Group's **Kneeboard**—that give you a chance to kick back while you kick butt in your favorite games.

California Pacific's Kneeboard lets you strap on your favorite stick. Just wrap the strap around your leg (anyone with quads over 26 inches need not apply), attach a joystick to the pad with either suction cups or the supplied Velcro strips, and you're ready to rumble! You'll look a little odd with this orange block strapped to your knee, but gaming is about high scores, not high fashion. (California Pacific Group; 916-483-7885; $9.95)

Armchair General's approach is a just a bit more glamorous. Attach the MousLounge to your computer's keyboard, and you have a portable pad for your favorite electronic rodent. If you like, you can remove the attached mousepad from the Lounge and let a joystick do some lap-dancing, too. Now that's what we call versatility. (Armchair General; 208-733-0700; $14.95)

—Christopher Lindquist

The Kneeboard gives your joystick the space it (k)needs.

The MousLounge puts rodent power on your lap.

CD³² Lands in the States

Now that **CD³²** is finally hitting the States, there will undoubtedly be throngs of die-hard Amiga groupies waiting to greet this newest set-top gaming box with open arms. But while CD³² comes with more advanced technology than CD-i, and a cheaper price and more titles than 3DO is likely to see for months, don't expect it to break open the set-top box market. At least not yet.

At first glance, CD³² looks like a strong contender. For just $399 you get a 32-bit CD-based unit that supports a variety of disc formats—including CD³², many CDTV and Amiga titles, and audio CDs. You can even play full-motion video movies and games with the addition of an optional MPEG-1 cartridge ($249). A double-speed drive spins the discs and a generic 11-button joypad connects man to machine.

Connecting machine to TV set is more of a problem. Commodore supplies all the tools you need to attach the CD³² console to the tube—providing you don't have a cable-ready TV. No one else can pass go until they visit the local electronics store and buy the necessary connectors, cables, and/or adapters for their particular TV set.
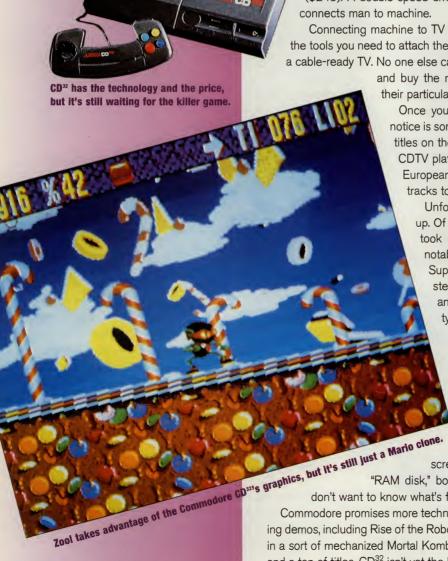
Once you get the system hooked up, the first thing you'll notice is some truly cool tunes. That's because most of the CD³² titles on the market come from Europe, where the Amiga and CDTV platforms have experienced some success. And those European developers sure know how to make great sound-tracks to play by.

Unfortunately the games themselves just don't measure up. Of the more than a dozen titles we saw, only a couple took real advantage of CD³²'s powerful technology. A notable exception is Zool, Ninja of the Nth Dimension—a Super Mario Bros. rip-off with hot 3-D graphics and a stellar soundtrack. The rest of the games were Amiga and CDTV titles or side-scrollers of the Sonic stereo-type that didn't excite us much.

Some of the games even had bugs. Voices weren't synchronized to actions in the opening sequences of Liberation, a futuristic "save the world from oppression" thriller. The same title also crashed back to an AmigaDOS screen when quitting—a frightening experience for anyone used to the load-and-go simplicity of most set-top units. Another game concluded with a screen that asked you to press a button to remove a "RAM disk," boding even more confusion for console users who don't want to know what's flowing through their system's guts.

Commodore promises more technopep for future titles, and there are some good-look-ing demos, including Rise of the Robots, which pits 3-D-rendered 'bots against each other in a sort of mechanized Mortal Kombat. But despite aggressive pricing, good technology, and a ton of titles, CD³² isn't yet the hammer Commodore needs to crack the CD set-top nut. (Commodore International; 215-431-9100; $399)   —*Christopher Lindquist*

CD³² has the technology and the price, but it's still waiting for the killer game.

Zool takes advantage of the Commodore CD³²'s graphics, but it's still just a Mario clone.

But Where Are Fred and Barney?

If all you know about prehistoric creatures is what you've seen in *Jurassic Park*, then it's time to take a fact-filled journey with **Prehistoria** from Grolier Electronic Publishing.

Prehistoria gives you detailed illustrations of over 500 creatures, including birds, mammals, amphibians, fishes, and dinosaurs that lived as long as 600 million years ago. You can listen to the correct pronunciation of a creature's scientific name, look on a time line to see when it lived, locate where it lived on a map, and discover just how big it was.

The most interesting part of Prehistoria is the collection of videos you'll find in the disc's museum portion. In a segment called Baby Dinosaurs, for example, you watch a short video showing scientists CAT-scanning an 80-million-year-old fossilized egg. The CAT scan shows the embryo of a duck-billed dinosaur. The embryo can be seen very clearly even in the video—just as well or even better than in the sonograms expectant parents show off to their friends.

There's another video featuring a paleontologist who explains the eating habits of warm-blooded and cold-blooded animals. In a one-year period, cold-blooded animals eat only 5 times their weight, whereas warm-blooded animals eat 50 times their weight. Yes, he points out, we *are* pigs.

Browsing through the 500 or so prehistoric creatures in the database is easy, too. The title organizes the animals into similar groups so that you can explore the relationships between them, or learn about their habitats by watching the disc's automated creature slide show.

This CAT scan of an 80-million-year-old fossilized egg reveals the embryo of a duck-billed dinosaur.

Since kids will most likely be drawn to this title, parents beware. Under Grolier's Museum and its sub-section Lives of Dinosaurs, there are some animated (but very realistic) videos of bloody dinosaur battles.

Grolier classifies Prehistoria, which is based on the classic Macmillan book, as a multimedia encyclopedia. This neat title is a great resource for the science student in your household, and it's enough to turn almost anyone into a paleontologist wanna-be. (Grolier Electronic Publishing; 800-285-4534; CD for Windows and DOS/Mac, $69.95)—*Donna Meyerson*

The Arandaspis was the first known vertebrate to exist on earth, 400 million years before dinosaurs appeared.

Action Replay for Techies Only

Cheats, secret passages, and passwords that help you beat games are cropping up all over the bulletin boards these days. But what if there's a game you really want to beat, and you can't find the cheat?

PC Action Replay includes a PC board that lets you examine the innards of your games and create infinite lives or mucho money *while you're playing*. But though it sounds great on paper, the reality isn't so sweet. On the whole, we found it unreliable and hard to use.

The package itself is complete—there's a card you put in your PC, a pause/slow-motion controller that attaches to the card, and software. Installation is pretty much automatic, but you may have to flip a couple of DIP switches to make it compatible with your system.

The instruction booklet, however, ranges from sketchy to indecipherable . If you want to get the most out of this system, you'd better know how to count in hexadecimal (there's an appendix in the manual that attempts to show you how) and understand memory addresses (that's there, too). And though the system seemed to work fine with the PacMan-like game that ships with it, things didn't go as smoothly with some of the other games we tried.

Even worse, PC Action Replay crashed several games (including Doom) and was only marginally useful in others. The supplied codes for Prince of Persia did work, and we were able to find some codes for Wolfenstein 3D, but both those games already have a large number of cheats available online and elsewhere.

Unless you're gadget-happy and have time to kill scouring the inner recesses of your PC, save yourself the $89 and buy some new games—or an online account—instead. (Advanced Console Technologies; 708-706-6720; PC, $89) —*Christopher Lindquist*

PC Action Replay is a cool idea, but it proves unreliable and difficult to use.

BACH TO THE FUTURE

The Composer in the Machine

C.P.U. Bach is a title about a genius, by a genius. And chances are you've never seen anything like it before.

A 3DO title created by famous game designer Sid Meier, **C.P.U. Bach** is more an experiment in logic than a multimedia title or a game. Following the rules of melody and counterpoint, it lets you actually—and easily—compose music for the piano, harpsichord, violin, string ensembles, and several other instruments.

The program lets you choose from among eight "concert" classifications: classics, party, soirée, sand man, and so on. Each concert plays a random mix of Baroque forms like preludes, fugues, allegros, and gigues, but you can alter how frequently they turn up. For instance, you could have your sunrise concert play only preludes, or preludes and fugues. Or your party concert could play gigues exclusively, which are lively and spirited.

For graphic feedback, you can watch 3-D renderings of the instruments and the musicians, or change to one of several views that feature a sort of light-show effect. For musicians and others interested in learning more about the music, there's the Musical Analysis view. It shows the score scrolling by as it's composed and also displays explanations of the different sections of the music and how they fit together. This is definitely educational. And it's even a rewarding way for an experienced musician to interact with the product.

Of course, the compositions you'll end up with are a mixed bag. They sound authentic, yes. However, they rarely show the brilliance and beauty of the music that has survived for centuries and become a part of our heritage. This should come as no surprise. After all, Bach himself probably discarded many of his own pieces, and there is no record at all of his numerous improvisations.

Still, even without the brilliance of a discriminating composer, the music is generally competent and fairly enjoyable. You may find yourself thinking of the old quip about putting a thousand monkeys at a thousand typewriters and coming up with the perfect sentence as you listen for particularly satisfying moments that occur almost at random. Every so often, C.P.U. Bach composes something quite beautiful. And when it does, you can save it on the 3DO system, or record it in stereo directly to cassette if you hook up the 3DO unit to your recorder. For me, the most exciting aspect of C.P.U. Bach is that it might come up with a truly brilliant piece of music. That alone is worth the price of admission. (MicroProse Software; 800-879-7529; 3DO, $79.95)　　—*Rusel DeMaria*

The music notes are really sliders that indicate how frequently each form will turn up in your composition.

Choose from several concert views like this one of musicians and instruments playing.

Prelude in E♭ major.
Imitation featuring Piano 1 and Piano 2
Modulating from E♭ major to B♭ major

The **THEME** of a piece is the main melody, or musical line, usually heard right at the beginning. The theme, or motives extracted from it, serves as a source of melodic material for the rest of the piece.

Here's the beginning of a particularly good prelude shown in the Musical Analysis view.

The concert menu lets you select your mood.

FUN WITH READING

It's All About Variety

When it comes to kids software, if it isn't fun, forget it. But as two new titles for beginning readers show, "fun" means different things to different kids.

Designed as a trip to a "musical theme park," **Sound It Out Land** uses an imaginary shuttle to get you around. Selecting an attraction is as much freedom as this program allows, though. Once kids choose the "Sing-Along Sam"

Sound It Out Land's Reading Robot teaches kids to sound words out.

Kids use the controls of a shuttle to choose attractions in Sound It Out Land.

The Word Zapper and his robot assistant help kids put sounds together in Rusty and Rosy Read With Me.

show, for example, they have to sit through the whole segment.

Sam teaches the sounds of the alphabet through songs and games. At Vowel Owl's treehouse, kids learn vowel sounds, while the Reading Robot tackles the tougher job of teaching kids to sound out real words. At Toucan Read's studio, children use reading skills to help the bird artist paint her masterpiece.

The suggested audience for Sound It Out Land is ages 4 to 6, but unless they're still enraptured by "Wee Sing"-style vocals, kids are liable to be bored. And the music is about all this CD title has going for it:

The visuals are disappointing and though the narration promises "a new experience" with each visit, repeated play revealed only minor variations. (Davidson; 800-545-7677; CD for Windows, $49.95)

Kids who want more freedom and more variety will prefer **Rusty and Rosy Read with Me, Vol. 2.** The opportunities for exploration and replay value are huge.

Treasure Hunt offers 10 concentration-style games that can be played with cards either face up or face down. The first 5 choices involve matching identical things, while the others require more sophisticated reasoning as kids match uppercase and lowercase letters and words to pictures. If a child matches all the cards (from 8 to 30) in few enough turns, a treasure appears in the scene that's been revealed.

It's in the program's other game, Word Traveler, that reading skills actually come into play. Assisted by an Einstein lookalike named Word Zapper and his tag-along robot, children put together words. These are stored on a personal word list, which kids can call up or print anytime. At the easy level, words are short, and pictures serve as visual cues. The medium level offers more sounds, and more opportunities for experimentation and error. When kids form a real word, the robot reads it and uses it in a sentence. At the advanced level, all the letters of the alphabet are available.

There's plenty here to please everyone in the recommended 3-to-7 age range. In fact, with so many options, it's useful to limit choices through the Parent Setup menu, which helps keep kids focused on age-appropriate activities. (Waterford Institute; 800-767-9976; Windows, $49.95)

—Peggy Berg

A Shaggy Cat Story

At first glance, **The Cat Came Back** seems like a simple story that your kids will quickly tire of. But when they start exploring what Sanctuary Woods has done with The Cat on CD-ROM, they'll find more than expected.

Sanctuary Woods has taken this 20-page classic and turned it into a funfest for kids ages 7 to 10. It's versatile and entertaining. Kids can listen to it in one of four modes—listen-along, read-along, sing-along, or write-along—and they can choose among English, French or Spanish.

The most entertaining part of The Cat is that it lets kids record themselves reading or singing the story. Recording allows kids to hear their own voices and their pronunciation of words, which is especially helpful if they're learning French or Spanish. But it's even more fun for them to record themselves singing to the tune of one of eight musical instruments: nylon guitar, tubular bells, harp, marimba, harpsichord, pipe organ, steel drum, or pan flute. It may be painful the first time, but don't worry—they can try over and over again until they get it right.

If your kids aren't so hip on singing, The Cat's write-along mode lets them try out their creative writing skills. In the mysteries section, kids fill in blanks and learn about faraway places such as Australia, China, Egypt, India, Peru, or Switzerland. They'll meet local animals, see sights, and bring back souvenirs.

In the story section, kids can invent and print out their own version of the tale. The printouts double as great coloring sheets, which all parents will appreciate. (Sanctuary Woods; 800-872-3518; CD for Windows/Mac, $39.95) —*Donna Meyerson*

Sing-along mode lets kids croon along with one of eight instruments.

The Cat Came Back's write-along mysteries section has kids fill in blanks to learn about faraway places such as China.

Finding Fun in Cybertown

These days, every kids' software maker is adding lots of hot spots and sound effects to otherwise ho-hum titles and calling them interactive. But while Modern Media's **Gus Goes to Cybertown** shares that familiar format, it happens to be unusually fun, innovative, and well designed.

In Cybertown, host Gus invites your kids into five interactive playgrounds: Addie's Market, Benny's Pet Shop, Cybertoys Toy Store, Lulu's Laundry, and the Park. The idea is to click on every object in each scene until they find the three Cyberbuds—futuristic-looking guys who will share all kinds of interesting trivia with them.

When they've found all the Cyberbuds, they're rewarded with the swinging Cyberbud Anthem.

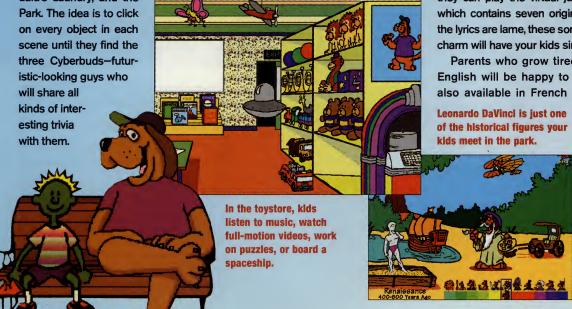In addition to the basic hide-and-seek game, each scene offers thinly veiled learning exercises with varying levels of difficulty. These include counting, letters and spelling, shapes and puzzles (my favorite), seasons, and object recognition. Gus speaks and sings helpful instructions for each activity. But if kids want to hear more, they can play the virtual jukebox in the toy store, which contains seven original Gus songs. Though the lyrics are lame, these songs' peculiar downhome charm will have your kids singing along in no time.

Parents who grow tired of hearing songs in English will be happy to know that the title is also available in French or German. Whatever the language, Gus Goes to Cybertown should prove to be an amusing and appealing educational game for children aged 3 to 7. (Modern Media Ventures; 800-530-5080; CD for Windows/Mac, $54.95) —*Sarah Tilton*

Leonardo DaVinci is just one of the historical figures your kids meet in the park.

In the toystore, kids listen to music, watch full-motion videos, work on puzzles, or board a spaceship.

Renaissance
400-800 Years Ago

TWYLA'S WORLD

Every Good Boy Does Fine (Girls Too)

The great thing about music is that it's so easy to enjoy. Your toe just starts tapping and pretty soon you're smiling. It could be rap from a boombox at the playground, the show tunes we're practicing in my drama class at the Rec Center, or a bluegrass band at the folk festivals I go to with my dad.

But even though it's easy to appreciate music, it isn't nearly as easy to make it yourself. Last year, I took a class in keyboard playing for about six months. Even though I liked learning how to play some easy songs, I found it hard to get the finger positions right. I still like to goof around on the Yamaha keyboard we have at home, but right now I'm thinking of trying the violin next year when we get to take an instrument at school.

Luckily, there are all kinds of programs for playing and learning about music on the computer. For this column, my dad and I tried out two CD-ROM programs for MPC computers, **The Musical World of Professor Piccolo** and **MusicMagic Songbook for Windows.** We also used a third program, Video-Jam from Electronic-Arts, that's not really for learning about music but that uses music in a really fun way (see Music Into Motion, page 29).

Both of the music discs were interesting, but in different ways. Professor Piccolo, for ages 8 to adult, is almost an encyclopedia of information about music, but it's really entertaining and interactive. The program is laid out like a theme park called Music Town, and you wander around between the symphony, rock club, jazz club, church, music school, game arcade, and library. Each of the buildings has buttons to push to

learn more about the instruments, musical form, and history for that type of music. Each building also has a stage view where you can click on the band members to hear just one instrument playing or the whole group together.
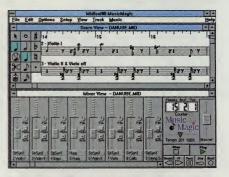
The music school has a 12-lesson program that teaches you the basics about scales, rhythm, and reading sheet music. Each lesson takes only a few minutes, but you really learn a lot. The arcade has four games that test your knowledge of sheet music by matching musical phrases to the right score. Or you can answer trivia questions based on information in the disc.

The one thing I wasn't wild about was

Professor Piccolo's music school offers fun lessons in scales, key signatures, and rhythm notation.

Click on one of the buildings to learn more about it in The Musical World of Professor Piccolo.

You can modify prerecorded music by using the score tool palette in MusicMagic Songbook.

Professor Piccolo

Rock Club - Stage View

Electric Bass | Guitar | Drum Set | Voice | Synthesizer | Full Band

About the featured ensemble

The featured 4-piece rock band consists of a fairly typical instrumental lineup: a lead singer/keyboard player, guitar, bass, and drums. As is often the case in popular music, the featured performer is the lead singer. Most popular music features rhythm...

Click to hear the sound of the Drum Set

Each music venue opens in a stage setting where you can learn about the instruments used for each music style in Professor Piccolo.

Professor Piccolo himself, who was kind of strict like some teachers and not as funny as guides I've seen in other kids' CD-ROM titles. Still, I really like this disk and I highly recommend it to other families who are interested in learning more about music. (Opcode Interactive; 800-557-2633; CD for Windows/Mac, $69.95)

MusicMagic Songbook isn't nearly as flashy as Professor Piccolo, but it's interesting because it uses the system called MIDI that professionals use for recording and playing back music on the computer. The songbook includes about 100 songs in seven categories: kids' tunes, pop music, classical favorites, and others. The simplest thing to do with it is to just select the song you want to hear. A window comes up with the words to the song or a few paragraphs of information about it. And the sound is really good.

The program gets more interesting when you go to the Score view, where you see the written music along with a sound mixer. Now when you listen to the song, you see which instruments are playing and where in the score you are. You can turn the different tracks on or off, or change the instruments playing each part. You can also make changes in the score using the tool palette of musical notes and symbols.

While I didn't really write any of my own music, I had fun messing up the pre-

Jazz & Ragtime

MusicMagic Songbook accompanies songs with lyrics and historical information.

recorded songs by sprinkling in a lot of extra notes, sharps and flats, and rhythm changes. To really be able to compose music, my dad says I'd need a more expensive Midisoft program that supports MIDI input from a keyboard (whatever that means).

I still don't know how to play the piano or the violin, but at least these programs taught me a bunch of stuff I didn't know before. And maybe now, when I listen to music, I can do more than just tap my toe. (Midisoft; 800-776-6434; Windows, $39.95; CD for Windows, $44.95).   —*Twyla Ruby*

Twyla Ruby, 8, attends Montclair Elementary School in Oakland. Her dad, Dan, helps her write this column.

Music Into Motion

What a cool concept! Kids direct their own music videos. Actually, the music isn't what's special in **Video Jam**. What's really different is how you put together animations that are timed to the music.

First you pick out the location for the shoot. There's a library of scenes—Wild West, beach party, moonscape, and lots more—to choose from, all nicely drawn in a cartoon style. Then you audition and hire the performers. There are about 50 characters available, and each one can do a bunch of different dance steps. Next you select your song from a library of rock, rap, and old classics.

Then you put it all into motion. You can time the movements of your actors to the exact beat of the music when you want them to take effect. You can also add some special effects that distort the images in surprising ways. If you're really careful, you can produce a two-minute animation with every motion exactly choreographed.

The videos don't require the software for playback, so you can put your finished video on a floppy disk and play it back on any MPC system. I've used several of the EA*Kids programs, and found that Video Jam is the must fun of them all. (Electronic Arts; 800-245-4525; DOS, $49.95)

Tube Man

Keith Ferrell

Grand Alliances

Whatever happened to HDTV? Depends on who you ask—and when you ask them.

Basically, affordable and effective High Definition Television—movie-quality images and a wide-screen aspect-ratio—remains a promise on the horizon, as it has for the past decade or so. The difference now is that the horizon is much closer, less crowded, and no longer overshadowed by the Rising Sun. Even more important, that horizon is becoming digital, making HDTV a perfect platform for all of the interactive entertainment now trying to find a home on computers, set-top boxes, and the so called Information Superhighway.

The new HDTV, when it arrives sometime between today and the end of the millenium, will deliver a lot more than just prettier pictures. Even that's a big deal, though, since the ability to put 35mm-quality images on the screen opens up plenty of new uses for television, including high-quality travel programming, art exhibits, highly-detailed instruction materials, and better-looking, more readable text.

But that's only the beginning. Going digital adds so much new capability that HDTV itself, as an acronym, may be eclipsed by the more appropriate ATV, for Advanced Television. And while there remain large questions of differing national standards—we want one set of standards, Europe another, and last fall the Chinese entered the picture with their own plans for an HDTV standard—ATV is finally emerging as a truly global effort.

It wasn't always that way. For years it seemed that HDTV would be a wholly Japanese show. There have been HDTV sets for sale in Japan since the early 90s. Problem is, they are hideously expensive (close to $6,000 for the cheapest model), about the size of a refrigerator, and do little more than increase picture quality by doubling the number of scan lines on the screen. Signal trans-mission, it is increasingly clear, lies at the heart of the Information Superhighway, whether it leads to a PC or a TV. And existing Japanese HDTV transmission is anlaog, as TV signals have always been.

The digital revolution, unfolding even as Japan undertook its HDTV effort, passed by much of the Japanese effort. Despite a major industry/government commitment, HDTV sales in Japan have languished. That's primarily because those who buy HDTV sets can watch only about nine hours a day of nature programming and sporting events broadcast in HDTV format. Welcome to the one-channel future.

That approach was doomed in 1990 when General Instrument devised a digital HDTV system. By last year continually advancing technology had created four groups of companies offering digital systems for advanced television.

Technology and trade may not be war, but they certainly inspire warlike language. What jumpstarted HDTV in the world beyond Japan was a so-called "Grand Alliance," formed in the spring of 1993, of various consortia, companies, and research and educational institutions including AT&T, General Instrument, MIT, Thomson Consumer Electronics, Philips Consumer Electronics, Zenith, and the David Sarnoff Research Center. It's hard to imagine any information base not covered by at least one of the alliance's members.

Working together, they carved out a strategy and a technology that should see a comprehensive approach to digital HDTV presented for FCC approval by early next year.

The system draws on a decade of digital innovation and advances: It will include both progressive scanning and interlaced video modes, permitting computer-style imaging and image manipulation as well as high-quality video. The audio side will offer multi-channel CD-quality surround-sound. To make it all possible, the system will take advantage of signal compression and decom-pression lessons learned from the information industries.

In short, the best of many worlds. That's why despite protests from the Japanese electronics industry, the Japanese government is making noises about dumping its analog standard in favor of U.S. digital technology.

Under this system, sets are expected to cost $1,000 to $2,000 more than existing top-of-the-line big-screen TVs, a far cry from the $40,000-plus price tag carried by Sony's first Japanese HDTV unit.

The key advantage is that the system establishes the framework for television to become a truly digital technology. And as we've seen from the computer, communications, and interactive entertainment industries, once you're digital, you're halfway to anywhere you want to go. Digital HDTV puts your TV set on the same highway as your computer, your telephone, your PDA , and the rest of the digital toys and tools we've been promised. Finally, perhaps, TV will come of age, becoming a full part of all our active lives, rather than the passive, low-definition window it's been for its first 50 years.

Keep watching.

Keith Ferrell is the editor of Omni, *editorial director for* Compute, *and science editor for* Penthouse, *each of which covers the digital revolution in its own way.*

Interact or Die

We met in a poorly lit garage under the seamiest office complex in Palo Alto—you still needed a Gold Card to park there. I was on the trail of some wicked geniuses planning to commit cruel and unusual acts on innocent computers and game machines. My contact was codenamed "Deep ROM."

"Interact or die!" he whispered from behind a blue Mercedes 500C. I immediately recognized the secret password for **Rocket Science Games,** one of the hottest software development companies in the Silicon Valley and the diabolical geniuses I was after.

"Don't take any wooden RAM," I answered, leaning casually against a cream-colored Porsche 911 as I delivered the coded response. My contact stayed in the shadows, but I could just catch the gleam in his eyes. He talked. I took notes.

According to Deep ROM, Rocket Science has three projects in development. The first is **Loadstar: The Legend of Tully Bodine,** written by Ron Cobb, whose film credits include *Alien, The Last Starfighter;* and *Star Wars;* and Brian Moriarty, who created Loom, Beyond Zork and other great games. Cobb originally developed the script as a John Wayne movie, back when the Duke was still alive.

Cobb likes to describe Loadstar as a strange mix of *Star Wars* and *Smokey and the Bandit*. The story is set in the 22nd century and features Tully Bodine, the mercenary skipper of the freighter Loadstar. He'll carry anything for a price, and in this adventure, he's got a load of contraband camels to send to Mars. Did I mention he's on the moon? Yes. He's got to traverse a complex rail network to make it to one of three 950-mile-long launch rails located in the Mendaleev crater before he can retire. Of course, carrying contraband has its drawbacks, and Tully has to dodge the police.

A first glimpse of the game's graphic concepts confirmed my worst fears. They were beautiful. Imaginative. Sometimes even funny. Have you ever seen a camel in a pressure suit?

Although Loadstar will feature movie-like story scenes with live actors, the game focuses on full-screen, high-speed action. Oh, and Loadstar is just the first of three Tully Bodine adventures.

But Loadstar is only one way to rocket into the future. Based on the popular graphic novels ("comic books," to the uninitiated) by Mark Schultz, **Cadillacs and Dinosaurs: the Second Cataclysm** catapults you into a 26th-century "world gone mad." Mankind has screwed up the ecosystem so badly that the human race has been forced to hide out underground for 500 years. When people reemerge into the Xenozoic Era, they find a world ruled by dinosaurs and outlaws.

Working with veteran LucasArts game designer David Fox, Schultz introduces you to Jack "Cadillac" Tenrec, nature shaman, and Hanna Dundee, scientist. With a new cataclysm on the horizon, it's up to Hanna and a Cadillac to set the planet back on course.

Deep ROM describes Cadillacs and Dinosaurs as "a 2.5-D game." That means two-dimensional objects with animated texture maps are placed into three-dimensional space. The objects look like they're 3-D, but they're not. The whole concept gave me a headache until I saw it on a small, flickering screen. The jungle landscapes scrolled by smoothly and rocks and fallen trees blocked the way.

Both games will appear in time for Christmas on Sega CD and may later find a home on Sega Saturn and PC CD-ROM.

Rocket Science has other plans for the Sega CD format as well. **Darkride** will feature pure high-octane action displayed in what the Palo Alto eggheads call **Rocketvision,** a technique that allows them to play super-smooth full-screen motion. The Rocket Science team includes the developers of QuickTime and Cinepak, making them experts on video-compression schemes.

Deep ROM describes Darkride as a kind of roller coaster in the dark—like Disney's Space Mountain ride but full of tricks, traps, and visual and audio jokes. And with the help of a diabolical artificial intelligence, the game will keep adjusting to your habits and find new ways to mess with your mind.

At that point, my mysterious source clammed up, claiming he'd already said too much. But as I drove away, I saw him sidle up to a shadowy figure sitting in a Jeep Cherokee. The word may be out...

In Loadstar, mercinary skipper Tully Bodine smuggles contraband to Mars.

Outlaws and dinosaurs rule the world in Cadillacs and Dinosaurs: the Second Cataclysm.

Rusel DeMaria is E2's games editor and the author of more than 25 computer and video game strategy books.

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Fearless

When your job is scouting parties from coast to coast looking for the hottest multimedia news, flying is a necessary evil. Which is why the jetsetting Party Girl always flies First Class—smoked salmon and a chilled glass of Pinot Grigio make even the dullest and bumpiest flights endurable. And of course, you can do some major executive eavesdropping there.

But United Flight 1717, whisking me from San Francisco to Los Angeles recently, was a standout on all accounts. There I was settled in at 30,000 feet, poring over some notes surreptitiously taken the night before, when the plane dipped and started heading down faster than the price tag on Philips CD-i. Somewhere right around Bakersfield, California, I'll guess, we seemed to be aiming for an emergency landing on some mighty unfriendly looking terrain. There was no apparent reason and the pilot didn't explain. The scared-silly flight attendant in First Class wouldn't even meet my eye. And for eight minutes—at least—we plunged to what we all imagined would be a certain death.

It's funny how different people react at times like this. I went all quiet and pushed my Powerbook carefully under my seat, but the 40-something guy next to me started babbling every song lyric Jim Morrison ever wrote. "Love me two times baby, love me twice today…" I'm not kidding. It was surreal. But then two things happened: First, the pilot finally leveled off at around 10,000 feet, finally explaining that the rapid descent was due to a cracked windshield. Then, as we headed back to S.F., the guy next to me started singing a multimedia tune—and it was music to my ears.

"**AT&T** is buying part of **Disney**!" he whispered excitedly, his eyes still glazed from the experience. Turned out the guy was a hot-shot lawyer type who'd been in on some early talks. Now you could chalk it up to hysteria—or to the fact that everybody's talking to everybody these days—but I'm not writing off this rumor yet. That AT&T has been making all kinds of weird investments and grabbing some rights to all that classic Disney content (think of the cartoon-value for kids' edutainment software) makes sense.

What made absolutely no sense is how United treated its panicked passengers once the ill-fated flight returned to the ground. After plunging us down some 20,000 feet, they put us on another plane and handed out coupons for $25 off a future United flight. Can you believe it? Looks like I'm doomed to a permanent fear of flying—or at the very least, a fear of flying United.

And speaking of **Doom,** after running into **Id Software** president Jay Wilbur back on terra firma, I was thrilled to find out that my newest passion is going to get even bigger and badder this Christmas with the release of **Hell on Earth**, the commercial sequel to the shareware blockbuster. It'll begin where Doom leaves off—back on Earth after you've done battle on the planet Phobos. Not surprisingly, those bad guys are coming back for more.

Some people can never get enough, especially when it comes to innovative rocker **Peter Gabriel**. Word has it that a Gabriel **Xplora** title is going to hit the **3DO** platform. And that's just the beginning. At the big **Interactive Media Festival** scheduled for Los Angeles early this June, Gabriel may be a featured live performer—and he will also grace the stage at the rumored **Interactive Woodstock** jam to be held—yes—on Max Yasgur's farm in upstate New York later in the season.

But as I said last month, I've just about had it with this hokey psychedelic 60s meets the multimedia 90s thang. It's bad enough that a battered, tattered **Timothy Leary** roamed all over the **Digital Hollywood** conference, but all these throwback trade shows with black lights and would-be hippie chicks are getting depressing. At one recent nostalgia-fest, some bell-bottomed teeny-bopper was drooling over the prospect of **Grateful Dead** drummer **Mickey Hart** working on a multimedia title with California's **360 Productions**. A company called **Fathom** is apparently doing the same with **The Rolling Stones**.
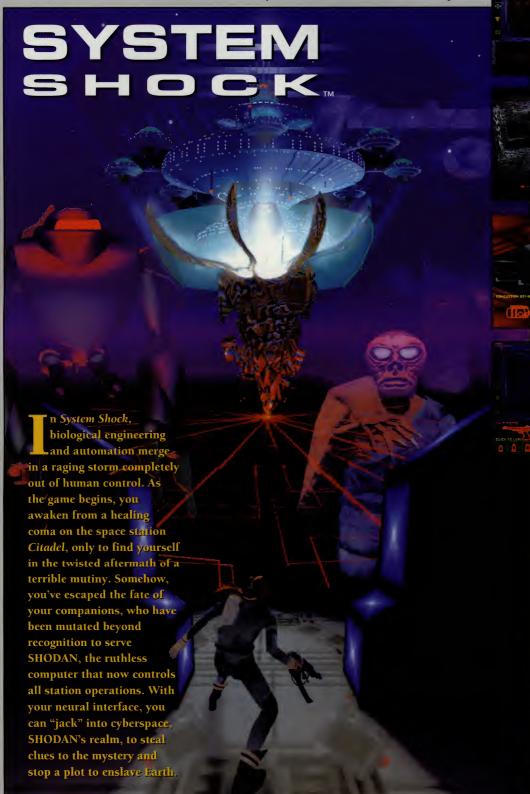
It seems like every aging rocker wants an interactive rock 'n' roll CD in his repertoire. At every high-tech show, representatives from every record company in Tinsel Town are running around desperately trying to hawk songs like **The Knack's My Sharona** to multimedia makers. There's got to be more to this stuff than just rehash, doesn't there?

Where's the new stuff, the alternative rock, the hip hop, the contemporary jazz, the cutting edge? Don't blame me—at least I'm trying to do something about it. Look for me near the bar, talking with my fave **Matt Johnson** about a deal to put **The The** on CD-ROM.

Mutants. Biohazards. Cyberspace. SHODAN.
There's no time to rest when your foe doesn't sleep ...

SYSTEM
SHOCK™

Actual screens may vary.

In *System Shock*, biological engineering and automation merge in a raging storm completely out of human control. As the game begins, you awaken from a healing coma on the space station *Citadel*, only to find yourself in the twisted aftermath of a terrible mutiny. Somehow, you've escaped the fate of your companions, who have been mutated beyond recognition to serve SHODAN, the ruthless computer that now controls all station operations. With your neural interface, you can "jack" into cyberspace, SHODAN's realm, to steal clues to the mystery and stop a plot to enslave Earth.

- Marvel at the first person, 3-D, smooth-scrolling viewpoint as you jump, lean around corners, look up and down, climb ledges, crawl through shafts, and even fly with rocket boots.

- Experience the most sophisticated physics system in a computer game, complete with variable gravity, recoil effects, explosions, and moveable, destructible objects.

- Listen to explosive sound in ORIGIN's new dynamically layered music system, and view realistic illumination effects – pools of light, shadows, flickering lights and flashes.

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OUTHOUSE. THEY COME IN HORDES, EATING YOUR 3D

TEXTURE-MAPPED HUTS, TREES, WOMEN, CHILDREN, AND

WORST OF ALL, YOUR COW. YOU TRY TO TRASH THEM

WITH YOUR SWORD, BUT IT AIN'T EASY,

AND THEIR GUTS GET ALL OVER YOU.

LIFE STARTS TO SUCK. YOU'VE MET

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CAST OF ACTORS WHO CAN ACTUALLY ACT; LIKE

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PITS. AND YOU HIRE AN ARCHER TO HELP FEND THEM OFF. AGAIN THE

HORDE ATTACKS. YOU SAVE THE COW, BUT THEY EAT YOUR HUT, YOUR

3DO

CORN CROP, AND THAT GIRL NEXT DOOR YOU HAD YOUR EYE ON.

NOW LIFE REALLY SUCKS. AND IT AIN'T ABOUT

TO GET ANY EASIER. THE EVIL HORDLINGS

GROW BIGGER, FASTER, EVEN SMARTER.

(AND YOU HAVEN'T EVEN MET THE EVIL CHANCELLOR YET.)

DEAR READER, WE PRAY YOU'RE THE SORT WHO LEARNS

QUICKLY. 'CAUSE THIS STUFF'S **CRYSTAL DYNAMICS™**

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Vacation

Take a Digital

No lost reservations. No flight delays. No gluey chicken Kiev. No hefty conventioneers in neon prints. No wrong turns. Hell, not even any mosquitoes. 🌴 Call it virtual travel. A new way to roam the world by chip, disc, and wire. Plug in, dial up, double-click, and you're off on a totally hassle-free trip. The vacation of your life. 🌴 Quit dreaming. It's just not happening any time soon. 🌴 Sure, there's software already on the shelves touting "virtual tours" and "cyber-journeys." Aided by the "eye-popping, ear-tingling, mind-expanding world of CD-ROM" as one pitch modestly puts it, they dangle the promise of pristine beaches and swinging cities neatly delivered to a monitor near you. Hear the pounding surf! Feel the waves! 🌴 Unfortunately, back on planet Earth, the stuff is pretty lame. You've got unintelligible interfaces, blotchy QuickTime and PC videos, cheesy elevator music, and grade-school narration. We're talking major disappointment, made worse by major hype. 🌴 But if virtual travel is still a long way from becoming a reality, computer and communications technology is about to change the genuine experience. A new breed of interactive guidebooks and maps is making planning a trip both simpler and more entertaining. Improvements in on-line computer reservations systems have finally transformed them into a viable alternative to travel agents. Personal digital assistants such as the Apple Newton offer on-the-spot directions and advice. And the personal navigation and mapping systems now entering the market will mean a lot less stress for travelers venturing into unfamiliar territory. (For more on these technologies, see "Book It Yourself" on page 40 and "Newton's Travels" on page 44.) 🌴 A lot of convincing remains, however. So far, only 3% of American travelers use their personal computers to plan trips or make reservations, according to the U.S. Travel Data Center. Only about 12% have even considered it.

BY AARON SUGARMAN

The big players are lining up the big marketing guns to do just that. Paramount, the company that brought "Star Trek" to the silver screen, is hard at work on a line of Frommer's Multimedia Travel Guides on CD-ROM. A division of media mogul Rupert Murdoch's News Corporation markets Taxi, a software product that combines a sophisticated mapping program with hotel and restaurant reviews. One of the first major programs for Apple's hand-held Newton personal digital assistant is a guidebook, Fodor's '94 Travel Manager, developed by Apple's StarCore division.

Remember Rockwell International, the folks behind those Desert Storm smart bombs? Sometime this spring, Rockwell will release NavCard, the first ever mini Global Positioning System. This neat little OEM device, smaller than a credit card, will let users of laptops and personal digital assistants tap into the U.S. Government's $10 billion network of satellites that provide instant, and totally accurate, location information. The price tag? Probably less than $400, and the odds are it will only get cheaper. The satellite data—including longitude, latitude, direction, and speed—is absolutely free.

Earlier this year, Panasonic introduced a hand-held global positioning device, the KX-G5700, with a price tag of around $1,000. Computer-makers Compaq and Dell, each preparing its own take on the personal digital assistant, have looked into including some type of mapping/satellite-positioning feature with their product. General Motors is planning to include a dashboard-mounted navigation system in some of its 1995 car models.

And then there's the untold legions of smaller, voraciously entrepreneurial software firms churning out mapping programs, databases, multimedia tours, foreign language translators, and god knows what else for travelers. Some of the names might be familiar, such as California-based Compton's NewMedia (now a unit of the Tribune), producers of a popular line of multimedia encyclopedias, and CD Technology, the Sunnyvale-California-based parent company of MediaAlive,

which has produced CD-ROM drives since 1987.

THE RIGHT STUFF?

One and only one thing drives the race to develop—and hype—electronic and interactive travel aids: bare-naked greed. Travel and tourism generate some $2 trillion in sales worldwide annually.

Accordingly, the innocent traveler faces a deluge of new products and a glut of raw data. This is significant because it's information that transforms the hapless tourist into the savvy traveler. The tourist pays $800 for his airline ticket; the traveler finds a $250 promotional fare. The tourist is swindled by a cabbie, while the traveler gives the driver directions. And when the tourist wanders into an overpriced snobbeteria, the traveler heads for the chic little bistro around the corner.

The million-dollar question is this: In the frenzied rush to get product out there, is anybody providing exactly what you need to help you make that crucial leap from tourist to traveler? The answer? Yes and no.

By and large, the most disappointing products are the new CD-ROM titles. "It seems like people are saying 'Let's create some shovelware because CDs are cool now'", says Scott Beatty, co-founder of Pro CD, a software development firm based in Marblehead, Massachusetts. "They don't realize that just because you can cram a lot of information onto a disc doesn't mean you should."

Compton's New Media, for example, has committed a series of guidebooks by author Robert Kane to CD-ROM. While the books—New York At Its Best, France At Its Best, and so on—are decent enough, the discs are incredibly awkward to navigate. It was far easier to find a restaurant in the book version's index than it was using the PC version. Click on a "picture" icon and you get a fuzzy gray map. Why bother?

National Parks of America, from Seattle-based Multicom Publishing, promises "exciting full-motion video" and "stunning full-color photographs by noted photographer

BOOK IT YOURSELF

Okay. You've planned and plotted to death. Now it's time to make reservations. You could make all the calls yourself, using the painfully low-tech telephone. Better yet, you could have your travel agent do it.

Frankly, I'm convinced that having a brilliant travel agent is the best bet. I love my agent: He bends airline advance purchase rules for me, donates hours of research time, and knows more about navigating computer reservations systems than I ever will. But agents like mine are rare, so there will be times when you have to go it alone.

Most major online services offer access to computer reservations systems. CompuServe, for example, has three options: Eaasy Sabre, Worldspan, and the Official Airline Guide's Electronic Edition. Each offers pretty much the same services; try them and see for yourself which is easiest to navigate. You get all the goods—flight schedules and fares, hotel and car rental details—and can make confirmed reservations. Relatively straightforward prompts guide you through the system.

Do reservations sometimes disappear? Are you getting the most up-to-date availability information? Well, maybe. If you're paranoid like me, you'll have your doubts. There will be times when you hear of better airfares, or show up at the car rental counter to find they have no record of your reservation. Of course, that could happen no matter how you book.

If you care to delve into travel conspiracy theories or compare notes with other online travelers, while your modem is humming, check into any of the many travel forums. They're lively, democratic, and opinionated. Talk about raw data. —A.S.

David Muench," but it doesn't deliver. The videos lack any feeling of grandeur, which is no mean feat, considering the subject matter. The photo quality is often mediocre. Plus, the whole thing runs so slowly I wanted to scream. Buy the coffee table book. (For more on multimedia coffee-table books, see "Books Without Paper," on page 46.)

TRAVEL UPGRADES

Better, but still not quite there, is World Tour, from MediaAlive. The CDs are broken down into three regions—America Alive, Europe Alive, and Asia Alive—each with appropriate text, maps, photos, videos, and music. For a change, this program is pleasing to look at and easy to get around: Click on the roller coaster icon, and you get theme parks and other attractions; select the skyline icon and you get cities. If, after zooming in on Miami, you want to see what else is in the region, the locator map suggests Universal Studios, and in a second you're there.

The problem with World Tour is the content. It's fine for kids and less-experienced travelers, but that's about it. There

are only 17 attractions listed on the America disc, for example, of which four are Sea Worlds and three are Six Flags amusement parks.

Where do the images and bits of information come from? For a hint, check the credits section, where thanks are given to state tourist boards and the contributing attrac-

tions. Is this information objective? Doubtful. Could you get pretty much the same stuff on Florida for free by calling the Florida Tourist board? Yup. Still, MediaAlive is on the right track.

So is San Francisco-based InterOptica. This company has nearly two dozen titles, covering natural and manmade wonders from the Great Barrier Reef to the Egyptian Pyramids. However, the discs are marketed as educational, rather than travel titles, and that's a problem. Astonishing Asia has some fun clips—the kick boxers certainly liven things up—but it's ultimately rather shallow

Catch this cool cat in Natural Wonders of the World.

in terms of details a traveler needs. (For more on these products, see "Optica Illusion," on page 20.)

One suspects that in time, InterOptica may get it right. After all, one of the company's directors is Simon Winchester, a worldly foreign correspondent with a wicked sense of humor. If only the programs were more like Simon and less like high-school

Movie

America Alive's amusement and water parks will only thrill the unsophisticated.

Golden Gate Bridge

Photographs, maps, video, and music are all part of World Tour.

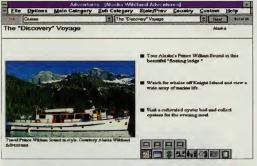**MediaAlive's World Tour stops in America, Asia, and Europe.**

tutorials. This is a point he does not dispute: "There does seem to be a rather relentless quality about the travel titles on the market," Winchester says. "Not much beauty or wit."

CATALOG OF DREAMS

More successful are the products from Deep River Publishing, based in Portland, Maine. Eschewing hype, Deep River promises something it can actually produce: thousands and thousands of listings. The compa-

Adventures mixes video with more than 2,500 slides and plenty of detail.

ny currently sells two travel titles, Adventures and the Everywhere USA Travel Guide; it plans to release a restaurant guide on CD-ROM this spring.

Adventures is a multimedia catalog of more than 1,000 adventure tours from leading tour operators. It has 45 minutes of videos, 2,500 slides, and all the details (phone numbers, dates, skill levels, prices) you need to plan a dream trip, whether it's hanging out with polar bears in Manitoba or hiking in the Himalayas. The two-disc Everywhere USA is similarly encyclopedic, with some 3,000 well-organized listings of festivals, museums, historic sites, minor-league hockey games, and the like.

There's definitely meat here. Ask Adventures for "pad-

The Adventure Disc eschews video in favor of high-quality Photo CD images.

dling sports," and you get 180 references in less than a minute. The problem with the Deep River products comes down to aesthetics. They don't really sing and dance. The videos are short, hard on the eyes, and, well, not nearly as inspiring as "real" video.

"Look, it's early in the process," says Deep River's executive vice-president Tom Tracy. "It's going to get better. And even now, this format is interactive and video isn't. Looking for a 'Cooking in Thailand' package is easy on Adventures. How would you find it on a video?" It's hard to argue with him there.

The poor quality of videos for PCs led Mountain Travel-Sobek, a tour operator based in El Cerrito, California, to stick to something more modest on the Adventure Disc, an electronic catalog. "We were pleasantly surprised at the image quality on the Photo CD format," says Dave Parker, the firm's vice president. "It works for us—it lets us put together an effective slide show with sound and image. Obviously, that's something we can't do in our printed catalog."

Exploring Ancient Architecture, from Medio Multimedia in Redmond, Washington, also attempts to deliver the sort of goods you can't get in printed form. Although not marketed as a travel title, Exploring Ancient Architecture is a first halting step in the direction of virtual travel. A

series of 3-D computer animations let you "tour" such attractions as the Parthenon in Greece and Stonehenge in England. "Walk" in the direction you want to go. Linger where you like, and skip the parts that bore you.
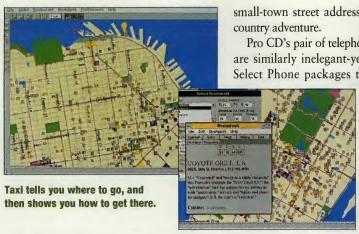
The concept is totally cool, but the execution is something else entirely. The resolution of the animations is mediocre at best—and this time, they don't have the video excuse. The animations track through things like stairways rather than showing the actual climb. (Every time it happened I winced, as if I'd bashed my shin on the marble.) The visuals and sound aren't synchronized: It's move in silence, stop, listen to the soundtrack, stop, move in silence. After MTV and the zillion-dollar special effects we've gotten used to, this is just not good enough.

Oceans Below, from Amazing Media, is a less sophisticated but perhaps more successful approach to this kind of specialized virtual travel, this time focused on exotic scuba-diving adventures. Pick one of 17 dive sites around the world, then click on the underwater flora and fauna to see video clips of that location.

Oceans Below can work as a world-wide diving guide.

Taxi tells you where to go, and then shows you how to get there.

small-town street address or plan a cross-country adventure.

Pro CD's pair of telephone directory discs are similarly inelegant-yet-practical tools: Select Phone packages the 10,000 or so phone books that make up the nation's telephone directory onto four CD-ROM discs; Free Phone contains all of AT&T's toll-free listings on one disc. Pro Phone helps you find listings that directory assistance can't. Looking for a long-lost friend or relative? Just enter their name, no area code required. Free Phone introduces what Pro CD calls its

"business theater" concept. The goal is to develop the disc into a multimedia Yellow Pages—ask for the Grand Wailea on Maui, and along with the phone number, you get a video tour of the property.

BUILDING A BETTER MAP

Although the bulk of travel software development is in CD-ROM, developers haven't abandoned floppy disks. The Automap Road Atlas from Bellevue, Washington-based Automap is perhaps the ultimate road-trip tool. Plug in just about any two points in the U.S., and the program spits out clear, written directions and a driving map. If you want, it will also tell you how long the trip should take and what it should cost in gas and tolls. (Be sure to get the upgraded version 3.0.)

City Streets, from Houston-based Road Scholar Software, picks up where Automap

Similarly, Compton's Multimedia Golf Guide offers pictures and stats on hundreds of courses in California and Hawaii and even includes Links, a popular golf game.

FIRST CLASS

I have no such reservations about Taxi, from News Electronic Data in Clinton, New Jersey, however. This is a straightforward guide to five major cities—New York, Chicago, Washington, D.C., Los Angeles, and San Francisco. Instead of videos, you get maps, the collected wisdom of the Zagats survey, and several incredibly useful features. Need to figure out where 360 Madison Avenue is? Wondering exactly where Grand Central Station is located? Ask Taxi, and your destination flashes on the map. A restaurant with a menu in braille? No problem. (The Oak Room at New York's Plaza Hotel is on the list; that's where Al Pacino's blind character has dinner in *Scent of A Woman*.) Driving directions? Taxi knows the way, and it won't send you the wrong way down one-way streets like a real New Yorker might.

Zagats, for those who've been sleeping for the last ten years, provides pithy and generally on-target commentary about restaurants and hotels. It's a well-organized, solid source of information. You can search the restaurant database by whatever is most important to you: type of cuisine, overall rating for food, decor (something romantic?), price, location. A similar search by category is there for hotels, too.

There are other successful if less ambitious products. Street Atlas USA, from DeLorme Mapping in Freeport, Maine, crams every street, road, and highway in America onto one CD. It may not be beautiful to behold, but it works: You can search for a specific,

TRAVELER'S AID

ADVENTURE DISC: Mountain Travel-Sobek; 510-527-8100; Photo CD-ROM, $10.

ADVENTURES: Deep River Publishing; 800-643-5630; Windows, $49.95.

ASTONISHING ASIA: InterOptica; 415-365-0769; CD-ROM for Windows and Mac, $49.95. (Other titles include 7 Natural Wonders, 10 Man-made Wonders.)

AT ITS BEST: Compton's New Media; 800-862-2206; CD-ROM, some titles in the series are available for Windows and Mac, some are Windows only, $24.95 each.

AUTOMAP ROAD ATLAS VERSION 3.0: Automap; 800-440-MAPS; Windows, $99.95.

CITY STREETS: Road Scholar Software; 713-266-7623; DOS, $99.95.

COMPTON'S MULTIMEDIA GOLF GUIDE, CALIFORNIA/HAWAII EDITION: Compton's NewMedia; 800-216-6116; CD for DOS, $39.95.

EAASY SABRE: AMR Corporation; 800-331-2690; available through major online services; no charge beyond standard online fees.

EVERYWHERE USA TRAVEL GUIDE: Deep River Publishing; 800-643-5630; CD for Windows, $59.95.

EXPLORING ANCIENT ARCHITECTURE: Medio Multimedia; 800-788-3866; CD for Windows, $59.95.

FODOR'S '94 TRAVEL MANAGER TOP U.S. CITIES: StarCore; 800-365-3690; Newton, $119.95.

FREE PHONE: Pro CD; 800-99-CD-ROM; CD for DOS, $49.

FROMMER'S MULTIMEDIA TRAVEL GUIDES: Paramount Publishing's New Media; 212-698-7671; CD for Windows and Mac, $49.95.

KX-G5700 GLOBAL POSITIONING SYSTEM: Panasonic; 201-348-7000; price not available.

NATIONAL PARKS OF AMERICA: Multicom Publishing; 206-850-7272; CD for Windows and Mac, $59.95.

NAVCARD: Rockwell International, Digital Communications Division; 800-854-8099; Available only to developers.

OCEANS BELOW: The Software Toolworks; 800-234-3088; CD for DOS/Windows/Mac and 3DO, $49.95.

PLACES RATED: Paramount Publishing New Media; 212-698-7671; Windows, $39.95.

SELECT PHONE: Pro CD; 800-99-CD-ROM; CD for DOS, $299.

STREET ATLAS USA: DeLorme Mapping; 800-452-5931; CD for Windows/Mac, $169.

TAXI: News Electronic Data; 800-HEY-TAXI; Windows, $69.95, CD for Windows and Mac, $79.95.

TRAVEL COMPANION: The Software Toolworks; 800-234-3088; DOS, $79.95.

WORLD TOUR: MediaAlive; 408-752-8500; CD for Windows, $119 for the three-disc set, $59 each.

Travel Companion is useful but a bit dull and outdated.

Automap gives you detailed directions no matter where you're going.

lets off—at city limits. While it doesn't have the hotel, restaurant, and attraction information that Taxi has, it makes up for it with the first consumer implementation of the Global Positioning System in a mapping program. Plug Rockwell International's mini satellite receiver into a laptop, boot up City Streets, and you are instantaneously pinpointed on a map of your location that moves in real time as you do.

Another potential competitor in the mapping guidebook field is Local Expert, which is similar to Taxi in content, with one ambitious addition: It lists theater dates, concerts, sports events, and other time-sensitive material. The goal was to provide monthly updates, perhaps through an online service. However, Santa Clara-based Strategic Mapping has "put Local Expert on the back burner for now; we're not marketing the product at this time," according to public relations manager Joan Hammel. "It's a time and money issue. But this is a sound concept and a sound product." Keep an eye out for a revived version down the road.

Travel Companion, from the Software Toolworks, was probably a sound product when it rolled out late in 1992. Now, however, this DOS-based guide to hotels, restaurants, and attractions in 25 cities seems a bit flat. The interface is a breeze, with maps and colorful icons. But the text, based on Frommer's U.S.A. Travel Guide, is on the dull side. The hotel and restaurant listings need updating, and the program lacks the bells and whistles that make Taxi so much fun.

Of course, there's more to travel than maps: There's the joy of arguing the relative merits of one destination over another. This is precisely where the Places Rated Almanac, from Paramount Publishing New Media, comes in.

Ask for destinations with fair skies: Places Rated suggests San Francisco, Ventura, and Santa Barbara. Culture? Try New York, Los Angeles, or Washington, D.C. Supporting the lists are arcane details such as annual rainfall and number of partly-cloudy days, or symphony performances per year and number of touring artist bookings. Can't decide between Seattle and New York? Go head to head: There's murder rates (19.6 per 100,000 people in New York, versus 3.5 in Seattle), miles of coastline (27 in New York, 70 in Seattle), and dozens of other categories.

THE NEXT STOP

Odds are, we won't have to wait long for upgraded travel products, hand-held or on CD-ROM. Personal digital assistants are expected to improve their capabilities, and Paramount's New Media division is set to launch its promising line of Frommer's Multimedia Travel Guides on CD-ROM this fall.

Unlike other products, which use promotional video from tourist boards, the Frommer's CD will contain original footage shot expressly for it. The video, combined with ambient noise, synchronized narration, and some new programming tricks, may provide the first credible virtual walking tours. "This has to be totally professional, with the production values people have come to expect from movies, or it just won't fly," says Keith Halper, a multimedia producer at Paramount New Media. "So that's what we're shooting for."

They won't be alone. "So far, you've had creative people jumping in with products lacking in technology, competing with tech people who've never done anything creative," says Jim L'Heureux, business affairs manager with Apple. "We're just starting to get everybody together. There's a lot of talent out there and when the right sensibilities get together and take full advantage of sound and image, you'll really have something."

Or as Scott Beatty of Pro CD puts it: "In the early days of television, could you have anticipated 'Twin Peaks'? People will find ways to exploit the medium." 🖋

Aaron Sugarman is special projects editor at Condé Nast Traveler *and the author of numerous travel guidebooks.*

NEWTON'S TRAVELS

One of the promises Apple made when introducing the Newton was that the convenient, hand-held computer would make life easier when you're out in the world. It would hold essential phone numbers, keep track of your schedule, receive e-mail. And with the release of Fodor's Travel Manager for the Newton, it would even replace your guidebook. On this score, as with the product as a whole, the jury is still out.

Information on eight U.S. cities has been packed onto one little data card, so you definitely save on luggage space. And Fodor's for Newton can direct you from your hotel to local attractions or nearby restaurants. But there seem to be gaps in the information. When I asked for American and Contemporary restaurants, the program had good suggestions, though only five of them, which is rather light for New York City. There doesn't seem to be a way to ask for a specific restaurant either. All told, the program was painfully slow and somewhat complicated to navigate. Plus, the Newton's dark, low-resolution screen made the maps hard to read.

Still, there's potential. Pack in more processing power so that the program runs faster and holds more data. Add a satellite navigation system so you can ask it "Where am I?" when you go astray. In the meantime, I'm holding out for a Newton that can deliver all of that. *—A.S.*

Apple's Newton and Fodor's Travel Manager make big promises.

"And what is the use of a book," thought Alice, "without pictures or conversations?"

POOR ALICE was just slightly ahead of her time. Had she lived to see the advent of electronic books, she'd probably turn the question on its ear. Now that digital books are adding multimedia enhancements, the real question is, what is the use of a book with just pictures and conversations? For people who just like to curl up with a good one, putting a book on your computer may seem beside the point. But with more than 3,000 digital books on the market, electronic titles can often do a better job of both communicating ideas and entertaining readers. Why read about a lunar landing when you can see a narrated video of the actual event? And why just read a novel when you can watch and listen to it unfold at the same time, or even change endings and perspectives to suit your fancy?

A new breed of digital books is

Books Without Paper

changing the traditional notion of what makes a book a book.

BY RUSTY WESTON

Just as important, electronic books employ sophisticated searching capabilities to give you immediate access to any passage or bit of information. In Voyager's The Complete Annotated Alice, for example, you can search the text of *Alice in Wonderland* and *Through the Looking Glass,* add notes to the margins, read the author's notes, even copy and paste its text into other computerized documents.

Digital titles deliver an experience you just can't get from a regular old printed book. One CD holds the equivalent of more than 60,000 printed pages, putting an entire library on your desktop. The Library of the Future from World Library, for example, holds more than 3,500 novels, stories, essays, poems, and other documents on a single CD-ROM disc.

A River of Information

There are three basic ways to navigate through an electronic book. The simplest is to leaf through the electronic pages—the virtual equivalent of paging through a printed book from beginning to end.

But electronic books commonly feature full-text random search capabilities that let you interact with the text in a different way. Using search techniques, you can instantly find the exact bit of information you're looking for. It's a simple idea but a powerful tool for those who want to find all references to a particular topic, incident, or person—or simply to find where Lewis Carroll first mentions the famous Cheshire Cat.

The third method—the tangential or hypertext approach—is more complex, and represents the biggest departure from the experience of reading a printed book. Think of a tangent as a branch of a tree. The main narrative starts on the ground and

Softkill: This multimedia techno-thriller reads like a Tom Clancy novel.

The Library of the Future holds 3,500 different works.

works its way up the trunk to the top of the tree; along the way, you can either follow a branch of the story line or skip it and continue climbing the main trunk.

Let's say you're wandering through the sprawling Compton's Interactive Encyclopedia and you come across an entry called Space. You could view a video clip of the Space Shuttle. But you could also pull up an entire series of related articles on NASA.

Want to learn the meaning of Gemini and why it was used to denote the second phase of America's space program? Highlight the word and touch the dictionary icon; the definition pops up in a window, courtesy of Merriam-Webster. (Gemini spacecraft held two astronauts, hence the use of the astrological sign for twins.)

Even fiction is beginning to make use of tangents. Text-only interactive fiction, such as the Civilized Software titles published by Eastgate Systems, uses complex hypertext techniques to link various bits of the story. Xiphias's Soft Kill, a multimedia techno-thriller in the style of a Tom Clancy novel, uses a more straightforward approach, letting readers choose which character's story to follow. "I'm in favor of classic story scenes with the option of interruptions for getting more information on a particular plot element, jumping to another perspective or point of view," explains Peter Black, Xiphias president and coauthor of the innovative new title.

Categorically Speaking

The experience an electronic book provides and its value vary according to the title's particular content and quality. Some developers have put a full range of multimedia as well as search and linking options to good use, but others are still struggling to create electronic books that deliver more than their paper predecessors. Moreover, some genres of books seem to employ multimedia better than others. Children's books and reference titles, for example, take to multimedia like ducks to water. Other genres, especially fiction, are still struggling to find ways to incorporate the power of the computer into a satisfying experience.

According to Gary Billerbeck, vice president for development at Silicon Alley in San Francisco, multimedia can "reinvent the novel" by allowing for tangents covering back-

8 Electronic Books Worth "Reading"

1. **The Tortoise and The Hare**—Totally absorbing and remarkably fun for kids of all ages.

2. **Compton's Interactive Encyclopedia**—Great interface for browsing or searching.

3. **1993 Guinness Multimedia Disc of Records**—The addition of sound and video makes this the ultimate trivia book.

4. **Time Table of History: Arts and Entertainment**—The time line effortlessly puts centuries of development into context.

5. **The Software Toolworks World Atlas (Version 4)**—A true multimedia globe for the virtual traveler.

6. **New Basics Electronic Cookbook**—This version of the classic cookbook lets you search for recipes, change portions, and substitute ingredients.

7. **The Complete Annotated Alice**—Pairing Alice with associated research material was an inspired idea.

8. **Microsoft Bookshelf, 1993**—This compendium of dictionary, thesaurus, and other references—accessible from Microsoft Word—is a great value for writers, editors, and nit pickers.

ground information or subplots that might otherwise bog down the story. Yet Silicon Alley's first title, No. 11 Downing Street, is a silly kids' book. Upcoming titles—including Warrior Spirit, Vita, and The Blue Danube—will attempt to extend the concept into works for adults.

REFERENCE BOOKS

Because they don't rely on a narrative structure, reference works are free to take advantage of the strengths of electronic books. Multimedia enhancements, vast capacity, and sophisticated searching capabilities can bolster works as diverse as encyclopedias, dictionaries, atlases, books of lists, and cookbooks.

Electronic encyclopedias such as Compton's Interactive Encyclopedia, Microsoft's Encarta 1994, and The New Grolier Multimedia Encyclopedia feature millions of words in tens of thousands of articles, not to mention plenty of pictures, maps, animation, and video clips, all in a fraction of the space a multivolume printed encyclopedia requires. Better yet, you can often buy a CD-ROM drive complete with a bundled encyclopedia for less than the cost of a traditional set of printed encyclopedias. That simple comparison has made encyclopedias on disc perhaps the most successful form of electronic book. (For more on encyclopedia discs, see "Rating the Electronic Encyclopedias," March, p. 30.)

The Software Toolworks World Atlas MPC

Software Toolworks' World Atlas pronounces place names for you.

The New Grolier Multimedia Encyclopedia employs innovative animations.

But even when shelf space isn't an issue, electronic books offer distinct advantages. Locating Bahrain digitally in an electronic atlas might not be much faster than thumbing through the index of a printed atlas. But with a digital version, you can print maps for a trip itinerary or copy-and-paste geographic information into a report or party invitation. Not sure how to pronounce Djibouti? In Software Toolworks' World Atlas, just click on the sound icon, and your computer says it for you.

Compton's Interactive Encyclopedia will add full-motion video late this year.

Medical books are another growing genre, designed to educate patients about pharmaceuticals, infant care, medical treatments, human anatomy, and other topics. Healthsoft's Complete Guide to Prescription & Non-Prescription Drugs, for example, holds a database with more than 5,700 brand-name and generic pharmaceuticals. Other titles include Creative Media's Family Doctor, with answers to 2,300 common health questions and video and animated explanations of human anatomy. The otherwise unexceptional Mayo Clinic Family Health Book from Interactive Ventures features a useful but scary photo gallery of common skin diseases.
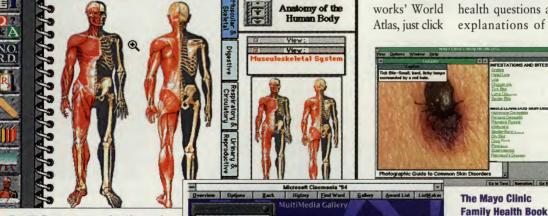
Special-interest reference titles range from video guides such as Cinemania '94 and MovieSelect to sports stats compendiums including Creative Multimedia's Total Baseball, The Sports Illustrated CD-ROM Sports Almanac from Warner New Media, and The Sporting News Pro Football and Basketball Guides, both from Compton's New Media. There are also history books such as Xiphias's Time Table of History: Arts and Entertainment, History of the
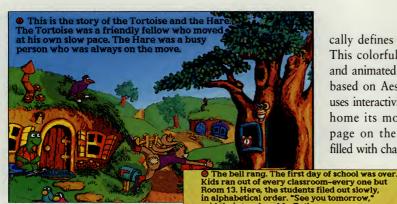

Family Doctor uses animation and video to explain anatomy.

The Mayo Clinic Family Health Book offers a photo gallery of skin diseases.

Cinemania '94 can help you find the perfect video to rent.

The Wall Street Journal Personal Finance Library could make you a mint.

This is the story of the Tortoise and the Hare. The Tortoise was a friendly fellow who moved at his own slow pace. The Hare was a busy person who was always on the move.

The Tortoise and the Hare is a classic children's electronic book.

Highway 1

Which side of this busy highway should poor Norbertina walk on?

←   Center   →

11 Downing Street is silly—but hides useful information as tangents.

The bell rang. The first day of school was over. Kids ran out of every classroom—every one but Room 13. Here, the students filed out slowly, in alphabetical order. "See you tomorrow," said their teacher, Mr. Ratburn.

In Arthur's Teacher Trouble kids click on objects to make them come alive.

Size: 33" long (85 cm)
This is a great bird! Scarlet Macaws used to live as far north as Arizona, but are now found in Mexico an more southern areas. They choose a partner for life, and live in flocks of up to 30 birds. They live 50 to 80 years. They eat seeds, nuts and fruit. They are an endangered species. Scarlet in this story is a Scarlet Macaw.

More   More

It's A Bird's Life adds puzzles and games to the mix.

cally defines the genre. This colorful, musical, and animated storybook based on Aesop's fable uses interactivity to drive home its moral. Each page on the screen is filled with characters and objects that come alive when touched with a mouse. The tortoise talks. The bird whistles. And when you click on a newspaper, the hare (who wears sneakers) reads it. When kids have explored everything in the picture, they move to the next page by clicking on an arrow. Children can read the text or listen to a narrator. Either way, the book works because it promotes story involvement. Brøderbund's Living Books series includes several other engaging and critically acclaimed children's books, including Arthur's Teacher Trouble, Grandma and Me, and New Kid on the Block.

For older kids, Silicon Alley's No. 11 Downing Street also employs video animations and lets readers piece together the story by chasing down tangents. The story itself is pretty pointless, but the asides pack plenty of useful information.

Other publishers have opted to blur the boundaries between books and games. One example, Shelley Duvall's It's a Bird's Life from Sanctuary Woods, tells a story about 17 parrots. Narrated by the actress, the animated tale teaches children about geography, clouds, and the Amazon rain forest as well as birds. Duvall's "book" also includes games and puzzles to increase the level of interaction.

While there are lots of ways to involve kids in electronic books, playing it straight is a complete mistake. Children simply won't sit still for half-baked translations from printed page to computer screen. Ebook's first children's title, The White Horse Child, for example, now comes across as bland and uninvolving compared to both paper books and more advanced electronic titles. The few animation sequences skimp on creativity, offering one-dimensional line drawings that lack the richness of other illustrated children's books.

Already, electronic children's books are becoming educational tools that can help build vocabulary and teach spelling and

World from Bureau Development, and Voyagers Who Built America?

Finally, the newest trend is how-to books that use multimedia, animation, and calculation to provide demonstrations and help solve complex problems. Examples include the Home Survival Toolkit from Books That Work, Xiphias's New Basics Electronic Cookbook, and the Wall Street Journal Personal Finance Library from Vertigo Development. For more on multimedia cookbooks, see "How My PC Got Me Cooking," on page 72.
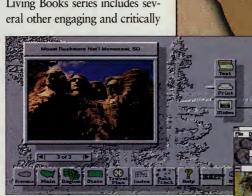
CHILDREN'S BOOKS

Better than other types of electronic books, children's storybooks have mastered the art of total absorption. Kids forget that they're reading a computer screen because they're not just reading or watching, they're interacting and driving the story forward. Watch for dozens of new, fully animated interactive children's titles to appear by summer.

In the meantime, Brøderbund's CD-ROM version of The Tortoise and the Hare practi-

From Alice to Ocean comes with a real coffee-table book.

Mount Rushmore Nat'l Monument, SD

3 of 3

Previous   Main   Region   State   Travel Plan   Index   Back Track   Help

National Parks of America looks better in print than on screen.

Low-resolution monitors make Impressionism even more impressionistic.

FROM HARDCOVER TO HARDWARE

*W*ho the hell wants to hear actors talk?" So sputtered Harry M. Warner, president of Warner Brothers Pictures, in 1927, on the advent of "talkies." Today, Warner's spiritual descendants might well ask, "Who the hell wants to read an electronic book?"

When Hollywood perfected the technology, "The Jazz Singer" proved that almost everybody wanted to hear actors talk. With the right hardware and software, electronic books may someday elicit the same response.

For now, though, most readers remain skeptical. While electronic book software is still defining itself, it's clear that today's computer hardware simply doesn't measure up to the task of replacing printed books in any meaningful way.

To truly compete with a paperback or hardcover book, electronic books need a hardware platform that makes them convenient, portable, easy to read under a variety of lighting conditions, comfortable to hold and use in different positions , and able to store and display large amounts of information in text, pictures, audio, and video.

Desktop computers have easy-to-read, high-resolution color displays and massive hard disks and CD-ROM drives to hold plenty of information. Connections to phone lines allow them to access data not stored locally. But desktop PCs tie you to your desk like a ball and chain. "Are you going to put a computer on your bed when you go to read to your child at night?" wonders Janice Maloney, editor of the newsletter *Digital Media*.

Notebook and subnotebook computers make electronic books portable, but they typically lack the CD-ROM drives and sound capabilities needed for multimedia. Just as bad, their limited power supplies mean you get only a few hours of operation without plugging into a wall socket. (What if the NiCads give up the ghost just as you get to the best part of the book? Paperbacks don't require batteries and won't shut down in the middle of a chapter.) And while some subnotebooks are now down to about 3 or 4 pounds, they are still more cumbersome than a real book.

The new handheld computers and personal digital assistants such as

Sony's Data Discman is today's closest approximation of an electronic book platform.

Franklin Digital Book System works great for special interest titles.

the Apple Newton and Tandy Zoomer are small enough—about the size of a paperback book— and run long enough for use as electronic book platforms. But they don't pack multimedia computing horsepower or the display technology required for hours of comfortable reading.

Right now, perhaps the best electronic book hardware is Sony's Data Discman, a multimedia CD-ROM machine about the size of a hardcover book (Sony Electronic Publishing; 800-689-2665; $299–$549.95, depending on size, multimedia capabilities, and bundled software). The Data Discman's 3-inch optical discs can each store some 100,000 pages of text, 32,000 graphics, or six hours of audio, and the device offers built-in speakers.

Sony markets this product for students, and the Data Discman's strengths lean heavily toward reference titles. Unfortunately, the Data Discman is awkward to hold and read in your lap. The monochrome screen is small, and delivers limited contrast and resolution.

Sony designed the Data Discman "so a person could carry around lots of information in a small package and access it quickly," says Bob Nell, Sony's Director of Personal Information Products. These products "were not meant to replace the printed page," Nell explains. "Don't expect anyone to pick up a Data Discman to read *War and Peace*."

Other products moving towards electronic literary hardware include Franklin Electronic Publishers' line of digital books. These units, which look much like calculators, use Read-Only Memory (ROM) cards to store up to 200MB of data. You can look up information, and the products also support audio.

Franklin's DBS-2D works with separate "books" delivered on ROM cards and cross-references them within the system. Current titles include the Bible, a baseball encyclopedia, a stock guide, and dictionary. Franklin also offers digital books dedicated to specific topics, such as a drink-mixer's guide and wine connoisseur's advisor. Easy to hold and convenient to carry, Franklin's calculator-like digital books are fine for reference purposes, but not well suited for reading large amounts of text. (Franklin Electronic Publishers; 800-762-5382; DBS-2D Digital Book System, $159.95; The Bartender's Guide, $59.95; Parker's Wine Guide, $79.95)

If the Sony and Franklin products are early attempts, what would the ideal electronic book platform look like? Picture a thin and lightweight vertical notebook that opens like an album, with large displays on both sides to simulate a book's pages. The ultimate electronic book will "turn" pages at the press of a button, make it simple to search for specific words, show pictures in an easy-to-read display, and deliver high-fidelity music, sound, and speech. It will run for at least 24 hours without needing a recharge. It will have to cost less than $100, too. After all, your eyes are the only equipment you need to read a regular book, so why should you have to invest a lot of money to read an electronic version?

While many industry experts expect to see machines that fit this description in the relatively near future, others aren't so sure. "I don't think that that's the right model," says Sony's Nell. "We're redefining reading."
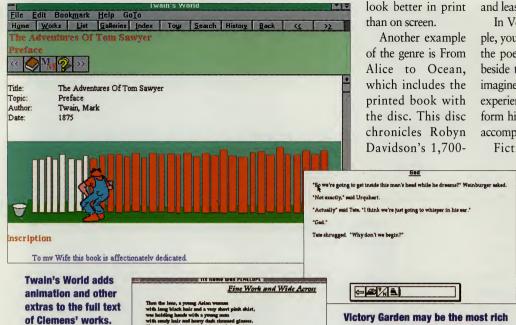
—*Wayne Kawamoto*

Twain's World

Title: The Adventures Of Tom Sawyer
Topic: Preface
Author: Twain, Mark
Date: 1875

Inscription

To my Wife this book is affectionately dedicated.

Twain's World adds animation and other extras to the full text of Clemens' works.

Its Name Was Penelope randomly generates snapshots of a story.

Victory Garden may be the most rich and readable piece of hyperfiction yet published.

Poetry in Motion uses sound and video to "read" poetry.

Afternoon, A story is considered a benchmark for electronic fiction.

pronunciation. And when children want to color in the pages of digital books, it doesn't harm the books at all. Beware, however, that crayons can wreak havoc on computer monitors.

COFFEE-TABLE BOOKS

Given the computer's multimedia capabilities, you might think that coffee-table books would be a natural to go electronic. After all, these books already cost as much as a typical CD-ROM title and live and die by their images, not their words.

Unfortunately, the coffee-table books in which pictures are the point just aren't terribly impressive on-screen, even viewed on Super VGA monitors. The problem is purely technical. The masterpieces contained in Ebook's Impressionism and Its Sources and Microsoft's Art Gallery, for instance, can't match the quality of photographs published in expensive art books.

The difference is obvious on National Parks of America, a CD-ROM version of a real coffee-table book. The disc version includes the text and David Muench's spectacular landscape photography but also adds an interactive travel planner. Still, the photos

look better in print than on screen.

Another example of the genre is From Alice to Ocean, which includes the printed book with the disc. This disc chronicles Robyn Davidson's 1,700-mile journey across the Australian outback, adding commentary and video clips. The combination works sort of like one of those high-brow PBS specials that present the same material as both a book and a documentary movie.

A coffee-table title for the whole family, San Diego Zoo Presents the Animals, adds value with an interactive tour for both adults and children, including 70 minutes of video and 2½ hours of audio.

POETRY AND LITERATURE

While poetry can use multimedia to blur the distinctions between reading and listening to verse, fiction may be the most fragmented

and least successful electronic book genre.

In Voyager's Poetry in Motion, for example, you can read the lines to yourself or view the poet's videotaped reading in a window beside the text of the poem. It's difficult to imagine how a printed book could match the experience of watching Allen Ginsberg perform his "Capitol Games" with rock-'n'-roll accompaniment.

Fiction is more problematic. Most titles are either adaptations of conventional books or new interactive titles. At this early stage of development, both sides fall short of fulfilling their potential: one because it resembles traditional books too closely, the other because it's so radical a departure from them.

A number of titles simply throw text onto the screen. The advantages of this approach are limited to search capabilities and sheer volume, as demonstrated by a title such as World Library's Great Mystery Classics, which includes dozens of works on a single disc. In a similar vein, World Library's Shakespeare Study Guide includes not only the complete works of the bard, but also Barron's Book Notes for when that term paper's due tomorrow morning. Useful, but not exactly fun.

Twain's World, from Bureau Publishing, goes a little farther with the great American humorist. You can watch black-and-white video clips of Samuel Clemens' times, check out period photos, watch animations, follow a time line, or listen to a narration. On the other hand, you can simply read or search through the author's collected works. You might not want to wade all the way through *Huck Finn* this way,

but it makes an entertaining entre into Twain's special genius.

It's harder to see the use of an electronic version of something like Michael Crichton's *Jurassic Park*. Search and annotation functions are better suited to study than to leisure. Pulp fiction like this begs for multimedia enhancements, but if you want to hear the T. Rex roar, you'll have to check out the Spielberg flick, not Voyager's Expanded Book.

A few pioneers are trying to develop so-called hyperfiction, but no one knows exactly what readers really want from such projects. Writers are just beginning to consider the chance to create branching story lines, letting readers choose endings and outcomes, or allowing readers to experience the same story from multiple perspectives à la *Rashomon*, the Kurosawa film.

So far, though, multimedia authors have found it slow going, both critically and commercially. Take The Madness of Roland, a heavily-hyped original love story about King Charlemagne's brave knight Roland and Angelica, the fair sorceress. You can read the story from one of five different characters' points of view. Despite its innovative approach, sales have been modest and criticism from the mainstream press has been devastating. *The New York Times Book Review* said of Roland, "The story concept is infantile, the writing dreadful, the hypertext structure naive, and a 'novel' is what it is not."

Pure hypertext "novels" have also had trouble. Titles such as Judy Malloy's its name was Penelope, Michael Joyce's Afternoon, a Story, and Stuart Moulthrop's Victory Garden serve up bits and pieces of the story connected by various types of links. You can move through the story page by page or follow a path of your own choosing by clicking on various "yield" words.

Perhaps because of the technical demands of writing to fit such a structure, or perhaps due to the limited market of people willing to read anything on their com-

WHAT MAKES AN ELECTRONIC BOOK?

When you walk into a bookstore, it's easy to tell which products are books and which aren't. Not so with digital media. There's tremendous overlap between various forms of CD-ROM titles. What's the difference, if any, between a video documentary of a family trip to the zoo, a zoo photo-picture guide, and an interactive CD-ROM zoo adventure?

The answer: not enough to get hung up over. But there are a few rules of thumb that may help you distinguish electronic books from games, interactive movies, and other media:

1 If text drives the story, it's probably a book. The Complete Annotated Alice, for example, contains the novel's full text, supported with a few illustrations.

2 If the point is to explore a space—such as the island in Brøderbund's Myst or the haunted house in Trilobyte's The 7th Guest—it's an interactive exploration or a game, not a book.

3 If it's a musical cartoon without a text-driven story, it's not a book. 7th Level's TuneLand is an example of an interactive, musical cartoon, but the simple game of hide and seek is not enough plot to make it a book. The Selfish Giant, from Sanctuary Woods, on the other hand, has just five songs and lots of text written by Oscar Wilde. It's a book.

4 If the story drives the action, it can still be a book even if it moves like a slide show or a documentary. From Alice to Ocean is a "book" because the pretty pictures tell the story of author Robyn Davidson's trek across the Australian outback.

puter just for enjoyment, none of these hypertext novels has enjoyed much mainstream success, although a few have received modest critical praise. On the other hand, the real problem may be that the best writers aren't yet writing interactive novels. What will we see when—and if—talented, respected authors begin writing electronic books? Nobody is really sure.

NO MORE BOOKS?

As electronic books become more and more interactive, with ever more animation and video, they may cease to be books at all. As they enter the digital age, books, movies, games, and edutainment are mutating and converging into entirely new forms of entertainment.

The addition of multimedia enhancements changes the nature of a book from a basically personal effort (give or take a few editors and typesetters) to a collaborative medium involving authors, editors, programmers, animators, and graphic designers. That will profoundly change the economics of publishing a book. A typical electronic book now costs anywhere from $20 to $100. A CD-ROM costs about $1 per unit to produce—less than a hardcover book but more than a paperback. The reason for the extra cost is the still-limited market and the soaring production costs incurred by adding the multimedia bells and whistles.

The high prices pose a special challenge for traditional bookstores, where customers are used to paying much less. However, a number of chain and independent bookstores around the country are now test-marketing electronic books. So far, the reaction has been generally positive. On the other hand, online services offer a channel for authors to deliver their words directly to readers bypassing the traditional publishing process.

In the long run, though, electronic books will likely become their own hybrid medium, not merely an extension of printed books. The digital book of the future will probably include text elements, but it will also have

The Selfish Giant features fun songs and Oscar Wilde text.

features of a game or a movie or a cartoon. The form the information takes will depend on what you're looking for and how you access it. What will it all look like? We'll let you know when we see the demo. 🖋

IF YOU THINK WHACKING, SLASHING, SHOOTING, BLOWING UP, KILLING AND OTHER ATROCITIES IS A CRIME AGAINST CREATURES BIG AND SMALL EVERYWHERE-

MovieSelect
(Paramount Interactive; 800-821-1177; CD for Windows/Mac, $59.95)

National Parks of America
(Multicom Publishing; 800-550-7272; CD for Windows/Mac, $59.95)

New Basics Electronic Cookbook
(Xiphias; 800-216-6116; CD for DOS, $69.95)

New Grolier Multimedia Encyclopedia 6.0
(Grolier Electronic Publishing; 800-285-4534; CD for DOS/Windows/Mac, $395)

New Kid on the Block
(Brøderbund; 800-521-6263; CD for Windows/Mac, $39.95).

No. 11 Downing Street
(Silicon Alley; 415-921-0409; CD for Windows, $29.95)

Poetry in Motion
(Voyager; 800-446-2001; CD for Mac, $29.95)

San Diego Zoo Presents the Animals
(Software Toolworks; 800-234-3088; CD for DOS/Windows/Mac, $69.95)

The Selfish Giant
(Sanctuary Woods; 800-245-4525; CD for Windows/Mac, $39.95)

Shelley Duvall's It's a Bird's Life
(Sanctuary Woods; 800-245-4525; CD for Windows/Mac/3DO, $39.95)

Soft Kill
(Xiphias; 800-216-2116; CD for Windows/Mac, $39.95)

The Sports Illustrated CD-ROM Sports Almanac
(Warner New Media, 800-593-6334; CD for Windows, 59.99)

The Sporting News Pro Football Guide
The Sporting News Pro Basketball Guide
(Compton's New Media; 800-862-2206; CD for Windows, $39.95 each)

Time Table of History: Arts and Entertainment
(Xiphias; 800-216-6116; CD for DOS, $59.95)

The Tortoise and the Hare
(Brøderbund; 800-521-6263, CD for Windows/Mac, $39.95)

Total Baseball 1993 Edition
(Creative Multimedia Corp.; 800-262-7668; CD for DOS/Mac, $69.99; annual update, $29.99)

Twain's World
(Bureau of Electronic Publishing; 800-828-4766; CD for Windows, $39.95)

Victory Garden
(Eastgate Systems; 800-562-1638; Mac,Windows, $19.95)

Wall Street Journal Personal Finance Library
(Vertigo Development Group; 617-225-2065; Windows, $69.95)

The White Horse Child
(EBook; 510-429-1331; CD for Windows/Mac, $29.95)

Who Built America
(Voyager; 800-446-2001; Mac, $99.95)

The Software Toolworks World Atlas (Version 4)
(The Software Toolworks; 800-234-3088; CD for Windows/DOS/Mac, $69.95)

Advertisement

The Gross,

These games are violent,

the Rude,

suggestive, and

BY VICTOR THUMBLISTER

1 Listen, if I say some silly things, I'm o

2 I'm so old-fashioned that I almost n

3 So I try 1,000 women and get lucky o

EXIT
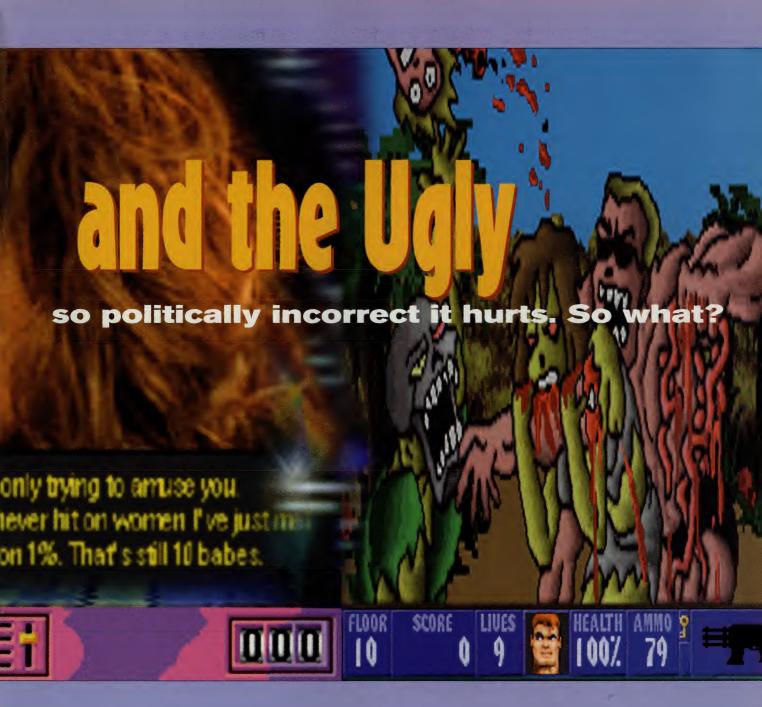
There's been a lot of lip-flapping lately about the bad influence that violent, rude, and degrading media depictions—including stuff in computer games—could have upon our brains. To hear some people talk, you'd think that a couple of hours at the arcade is enough to turn the average 12-year-old into Hannibal Lecter.

Give me a break. Look at me. I may not exactly be Alfred Einstein, but I don't go around mutilating strangers just because I can rip 'em to shreds with my Thrustmaster joystick.

Anyway, some of today's smartest experts say people don't get violent ideas from sicko games or TV shows where women get stalked or shoot-'em-up torture movies. They say the big problem is *society*. That's good news for me,

and the Ugly

so politically incorrect it hurts. So what?

only trying to amuse you.
never hit on women I've just me
on 1%. That's still 10 babes.

FLOOR	SCORE	LIVES		HEALTH	AMMO
10	0	9		100%	79

because with a schedule like mine (sleeping 12 hours a day, watching TV for 5 hours, playing video and computer games for a couple more hours, listening all morning to that radio-show guy everyone hates, and working my part-time night job), I don't have a lot of time for "society," even if they invited me. So I guess I'm safe from whatever "harmful influences" it might have.

That's probably why E2 asked me—your humble reviewer, Victor Thumblister—to take a look at today's most twisted, repulsive, needlessly savage, vulgar, and "off-color" computer games to see if they're really as *fun* as everyone says, or if they're just lame and stupid. I've been playing offensive and mega-violent games for longer than I can remember. Actually, I've

been doing a lot of things for longer than I can remember, like, for instance, writing this paragraph.

So what are the most revolting, disgusting, crass, and socially unredeeming games out there? Let the reviews begin. And if you don't like it—as they say—you can change the channel. Or get a life. Just don't bother me with your whining.

A few zombies and some mild-mannered voodoo is all that Gabriel Knight delivers.

It takes some serious practice to do more than splatter blood in Mortal Kombat.

What's in a name? In Road Kill, it's the best part of the game.

Serious Dismemberment

First, let me say one thing about Mortal Kombat: I appreciate that one of the words is spelled wrong. This little detail, which makes the average user feel at home right away, could be responsible for the game's stunning worldwide success.

As everyone knows, the main goal is to beat the Ragu sauce out of a series of opponents using combinations of kung fu, sword fu, kick-in-the-head fu, knee-in-the-groin fu, electric-shock fu, dismemberment fu, and rip-out-the-other-guy's-spinal-cord fu. Each fighter has special moves only he or she can make, so if you stretch a point, you could say that in a way Mortal Kombat is not unlike chess.

I would rate the gore here as excessive but definitely not as gross as in the movie *Needful Things* where they show a skinned dog. Social critics might find the depiction of violence to be harmfully unrealistic because it doesn't show the aftermath—for instance, what will the family of thunder deity Raiden have to endure after they learn Raiden has gotten his guts yanked out in a fight? Also, after you've already got credit for winning a fight against a loser, the game tells you to keep going and "Finish him!" Some might perceive this as teaching kids poor sportsmanship.

The truth is, in both Mortal Kombat *and* real life, you can't just waltz in and do a puppet show with people's brain stems. You need experience and sophistication to do that. This makes the PC version a decent deal, because its cost is equivalent to 120 quarters, and even though you can splatter blood with your very first head-kick, you'll definitely have to play more than 120 times before performing any serious dismemberment. But you'll want to play that often, because this is one of the all-time games of reflexes and strategy, even including nonviolent ones that are spelled right.

Dead Ant, Dead Ant

In Syndicate, you construct murderous robotic agents using cybernetic implants and high-tech weaponry so you can dominate the planet. I like the way the manual first says how you need "a remorseless lust for power to commit gross acts of violence," then tells you that to toggle the music on and off you should use the F2 key. Like you're gonna be slaughtering guys left and right, but suddenly think to yourself, "Hey, wasting humans is sure swell, but something's missing. Where's the soundtrack?"

Since you have to invade different territories on a world map by wiping out all the suckers guarding the place, in some ways this is a lot like the board game Risk. But in this case you're not just rolling dice to symbolize mega-death—you actually kill everyone in sight. Who needs symbolism when you've got the real thing? Another added touch of realism is that the dead bodies stay there on the ground after you smoke them, unlike in many other games where your dead victims magically disappear as if there's some dead-guy-removal service working the neighborhood.

But, on the whole, I rate Syndicate low on the gore-meter because the characters are as tiny as ants. If you've ever crushed ants, you know there's not a lot of blood to go around. After a while it just gets boring.

Great Name, No Game

On CompuServe I came across a shareware game with the high-potential name Road Kill. The author only wants $7 for it, and I can see why. Its graphics and controls are simpleminded, sort of like the programmer just graduated from "Now You Too Can Make Pong at Home" school.

The car you drive is a little red rectangle. You tool around on some freeways until you see a blue rectangle car that must con-

Forget the Nintendo version—for real blood and guts, play Wolfenstein on the PC.

The Barneystein patch to Wolf -3D lets you blast Barney instead of Nazis.

Cartoon zombies feast on your brain in Isle of The Dead.

tain bad guys, because for no reason whatsoever they start firing at you. They're also faster than you, so if you don't do anything, pretty soon your car can't move anymore and there's a message that says in large, capital letters "YOU ARE DEAD!"—like the programmer was really excited about this possibility.

That's the whole game. There's no carnage. Even when you do manage to pick off a few carjackers before they get you, it gets old fast. But you have to give 'em credit for the name.

Automatic Weapons and Chainsaw Fun
I hear that in the sappy Nintendo version of Wolfenstein 3-D, they don't let you splatter blood like in the PC version, and you can't kill German shepherds. Instead of attack dogs, you get to waste mutant rats. The guards on Nintendo aren't Nazis, either—they're a generic military goon squad led by a bogus dictator named Hister. I guess that makes sense: A lot of little kids play Nintendo, and letting them blast the guts out of a real historical figure might be traumatic.

Of course, the PC version of Wolf 3-D and its equally bullet-riddled sequel, Spear of Destiny, show no such restraint. In fact, since the main activities are running in

mazes and shooting people (and mutts) with automatic weapons, you really get to paint the walls red. Both these games are en-"grossing" just for their 3-D graphics, but it doesn't hurt to have the added thrill of being near death at every corner in a game that seems to be all corners.

If killing Nazis doesn't seem tasteless enough to you, there's always the shareware "patch" that changes Wolfenstein to Barneystein, in which annoying pop icons such as Barney and Beavis and Butthead take the place of the Nazi guards. There is a certain satisfaction in blasting Barney and the Butthead gang to oblivion since they're asking for it to begin with.

The newest release from Wolfenstein's creator is Doom, which also involves running through a maze of thugs trying to liquidate you, but it's more advanced. Now you're in outer space, where you can walk up stairs and die in pools of green acid. You also have a nasty arsenal of new weapons.

In the computer store the other day, I saw a couple sales guys playing Doom who were particularly excited about using the *chainsaw*. There isn't much chainsaw-simulation software out there—even for serious lumberjacks—so this is a breakthrough. There's even a chainsaw "cheat" you can

get from hackers that lets you fire up the McCullough for a genuine intergalactic chainsaw massacre whenever the fancy strikes you. So now we have chainsaw fu!
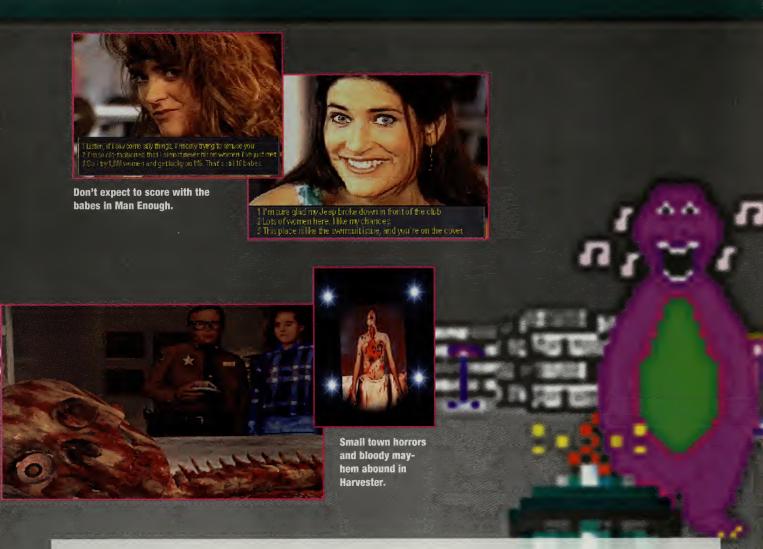
For Zombies Only
A sleazemeister I know suggested I check out Gabriel Knight: Sins of the Fathers because it features scary, adult themes and ritualistic murders. Its box is sure spooky: There's a dead guy hanging from a dead tree, a shadowy, creepy face, and writing that says the game "features the talents of Mark Hamill and Efrem Zimbalist, Jr." That alone is enough to make anyone hurl.

You play the role of Gabriel Knight, an amateur sleuth whose name contains references to both the Bible and chess—so you know this has got to be socially redeeming and exciting. But after half an hour, even though there were references to voodoo and zombies, I didn't get near anything gross or violent. So the only thing severe about Gabriel Knight was the strain on my attention span.

Caution: Flying Eyeballs
But there are zombies galore in the horror adventure Isle of The Dead. The sole survivor of a plane crash on a mysterious

1 Listen, if I say some silly things, I'm only trying to amuse you.
2 I'm so old-fashioned that I almost never hit on women I've just met.
3 So I try 1,000 women and get lucky on 1%. That's still 10 babes.

Don't expect to score with the babes in Man Enough.

1 I'm sure glad my Jeep broke down in front of the club.
2 Lots of women here. I like my chances.
3 This place is like the swimsuit issue, and you're on the cover.

Small town horrors and bloody mayhem abound in Harvester.

island, you get attacked and killed early and often by zombies who munch your skull. I can't call the violence technically gross, because all the brain-drinking, head-tossing zombies are drawn in an extra-cartoony style. Sometimes it feels like you're lunch for the "The Archies" gang.

But the game earns its warning sticker. For instance, when you want to quit playing, instead of returning you to the DOS prompt, it comes up with a screen of a guy blowing his head off with a rifle. In this and other head explosions, the graphics are obsessed with eyeballs. Even though the whole head turns into a tsunami of blood, the eyeballs stay intact as they fly out separately into space.

Spine-Tingling Horror

Another game with extremely high sicko potential is Harvester, which is coming out this summer. Even the preview literature (which calls the game "a graphically violent experience in terror") was pretty scary for a brochure. You play the role of some farm guy. He's about to get married to a girl— but suddenly you *both* get amnesia. Why? I don't know.

Then she disappears, and the only evidence the local Andy Griffith-type sheriff can find is a skull with its spine considerately left attached. Nobody knows whether that backbone belongs to your fiancée, so you investigate by entering the creepy town lodge, where all the terrible, devilish local secrets are kept (maybe it reveals which "Twin Peaks" episode they got the theme from). Bloody mayhem— involving arcade-style fights—is promised to be had by all.

For Mature Audiences Only

Now we move to the section for "mature, adult audiences," if you get my drift. I never understood that "mature" label. If someone actually is mature, they're going to be in the library reading Shakespeare, not watching *Porky's*. Whatever.

The box of Man Enough says it's "the only first-person interactive social adven-

ture." I thought this was a cool idea until I began to wonder, isn't *real life* a first-person interactive social adventure? But then I realized something about the potential audience of Man Enough: Maybe a lot of them don't have real lives.

The game comes promisingly on two CD-ROM discs, and the box, depicting a major babe in a low-cut dress, says it contains some decent live-action video. You can imagine my surprise when the video was strictly of the dippy parts of a date, like driving in a car and talking.

Basically, you spend a lot of time trying to "date" a series of babes, but all your dates end up in frustrating rejection and no nookie whatsoever. Bad-date software is not what the world is crying for. If this were a movie, I'd fast-forward through the whole thing.

Leisure Suit Larry 6 (I swear, by the time they quit making Larry sequels, leisure suits will be back in style) takes a more lighthearted approach to trying to bag a bunch of babes. It's lighthearted because you

METAL & LACE: The Battle of the Robo Babes
MEGATECH SOFTWARE, Release June 93

Battle the Robo Babes, then watch
them dance in Metal & Lace.

Gary
Oooh! Hello, sailor! New in
town?

Well-endowed women and lame
dialogue populate Leisure Suit Larry.

Leisure Suit Larry 6

EXIT

METAL & LACE: The Battle of the Robo Babes
MEGATECH SOFTWARE, Release June 93

The Gory Details

Doom, Id Software; 800-434-2637;
DOS, $40

Gabriel Knight: Sins of the Fathers
and **Leisure Suit Larry 6: Shape Up or
Slip Out,** Sierra Online; 800-757-7707;
DOS/Windows, $69.95, CD for DOS,
$79.95 (Knight); DOS, $69.95 (Larry)

Isle of the Dead and **Harvester,** Merit
Software; 800-238-4277; DOS, $59.95
(Isle); DOS, CD for DOS, $79.95
(Harvester)

Man Enough, Tsunami Media; 800-
644-9283; CD for DOS, $79.95

Metal & Lace, Megatech; 800-258-
6342; DOS, $44.95

Mortal Kombat, UltraTech; 212-941-
1224; DOS, $69.95

Road Kill, shareware; available on
CompuServe or write James Zeidel,
26 N. Madison, LaGrange, IL 60527;
DOS, $7

Syndicate, Electronic Arts; 800-245-
4525; DOS, $59.95; Amiga, $49.95

Wolfenstein 3-D and **Spear of Des-
tiny,** Apogee Software; 800-426-3123;
DOS, $49.95 (Wolfenstein); DOS,
$34.95 (Spear)

(Larry) are obviously a loser. So when you say rude and obnoxious things to every female you meet, it's not serious—it's funny! I mean, it's supposed to be, anyway.

Larry skanks around a luxury health-spa trying to score with various well-endowed, bodacious babe-olas. They say things a real human, well-endowed girl would never say, probably because the dialogue was written by the guy who won the Dom DeLuise lookalike contest (they actually show him on the box).

There are lots of "off-color" gags (mostly about staring at boobs) like the ones your uncle tells after Easter dinner. I say, if you really want to check out cleavages that much, buy a copy of Vogue magazine for 4 bucks and get it over with.

Bringing it all together is Metal & Lace: The Battle of the Robo Babes, which has both sexy graphics and kick-ass fighting (but not at the same time). The software uses the Japanese animation style which they call "Anime," but here in America we call "Speed Racer-style." Traditionally, it fea-

tures American-looking women with mega-breasts and big blue eyes. In Japan it's not considered weird for a businessman to read really perverted Anime-style comic books while riding on the subway.

In this game, you go to an island (why are the Japanese obsessed with islands?) called MeCHa to battle against various heavily-armored Robo Babes (who, as you might expect, also work as lounge dancers). You fight using basic Kombat-type joystick moves, but the babe fu here isn't so gross. After you defeat two Robo Babes (it's not easy), you get to see them dance in skimpy clothes by clicking on a "babe" poster in the bar. (Girls can skip that part.)

The software sells in a version rated NR-13, but, if you're old enough, you can send Megatech $5 for an "upgrade" disk that bolsters it to an NR-18 rating. That adds partial nudity (Robo Boobs). Boy, if Microsoft offered that kind of upgrade for Excel, I think Bill Gates would own the world by now.

Fine artists
are beginning
to use interactive
multimedia to
create innovative
new performance
and sculptural
works.

THE ART OF

MULTIMEDIA

BY
TIMOTHY
O'BRIEN

H AVE YOU INTERACTED WITH A SCULPTURE RECENTLY?
Ever attended a chamber music concert by animated musi-
cians? Or watched a theater production where you couldn't
tell what was live and what was electronic?

You will. Fine artists are now beginning to take advantage of
the emerging digital media to create new kinds of sculpture,
painting, music, theater, and dance. Like movies, TV, and com-
puter games before them, the arts will never be the same.

Join the Flock

As you approach the sculpture, the giant tentacle-like structures tower men-
acingly above you. As you come within range of its network of acoustic,
kinetic, and infrared sensors, huge arms begin to move as if alive. Made up
of a strange collection of dried, twisted grape vines interwoven with
mechanical parts, the arms recoil if you get too close to the tip of the tenta-
cles and move toward you if you back away.

Called The Flock, this lifelike sculpture consists of a group of cybernetic
sound structures—basically huge computer-driven tentacles that behave like
flocking birds, fish, or bats. The creatures of The Flock also communicate
amongst themselves through touchtone telephone notes, each unit constant-
ly informing the others of its position and allowing them to follow its lead.

This complex combination of movement and communication allows
The Flock to generate a wide range of both learned and unpredictable
responses. If one viewer is in the gallery, for example, The Flock might
react with wild movement, while it would respond more calmly to a
group. If the group moves to another viewing position, however, The
Flock will react completely differently.

Created in 1992 by Ken Rinaldo and Mark Grossman of San Francisco-

based Interactive Emergent Systems, The Flock represents an early example of intense cooperation between artists and technologists. Rinaldo, a sculptor and former computer consultant, and Grossman, one of the founders of Silicon Graphics (a leading producer of workstations and software used for multimedia), met at a party and together began a project mixing art and technology.

To make The Flock work, Grossman wrote special software for Silicon Graphics workstations. The advanced algorithms that control the sculpture's movements make the work as much a foray into artificial intelligence as a traditional sculpture piece.

Rinaldo and Grossman believe the key concept in The Flock is "emergence, the coming together of systems—with no central controller guiding their behavior—to produce a group behavior that can't be predicted by any individual spectator." They're now working on new sculptural forms that explore different types of flocking behaviors.

The Flock is an interactive sculpture that produces unpredictable group behavior.

The New Interactive Art

The technology behind The Flock may be new, but artists have always adopted technological innovations to help present their ideas. Back in the 17th century, for example, technological advances made in the Italian naval shipyards led to the elaborate stagecraft techniques used in opera.

Today, visual and performing artists are scrambling to take advantage of the emerging interactive multimedia tools to create new works and even new art forms. Progress has been slow, however. Despite the entertainment industry's call for more "content" to fill up the hundreds of new cable channels expected over the next few years, fine artists have largely been left out of the land of digital opportunity.

As the technology becomes cheaper and easier to use, however, that's beginning to change. After years of training, experimentation, and false starts, artists using multimedia are finally gaining recognition through well-promoted and well-attended exhibitions and performances. As nationally recognized artists such as choreographer Merce Cunningham, visual artist Jenny Holzer, and rock singer-composer Thomas Dolby employ multimedia tools to create or present their work, they're bringing new credibility to the genre.

So-called mixed media—combining video, images, and other techniques—has been widely used in both the visual and performing arts for decades. But now there's a growing sense of excitement and enthusiasm about the potential use of interactive digital multimedia. Artists are beginning to realize that they can use digital technology designed for business and entertainment purposes to create art.

A New Sensation

"I love these times. We are at the beginning of a new age of art," exclaims information artist Elliot Anderson of San Francisco-based Techne, a visual arts organization dedicated to the production and support of new media arts. "It's that time in a new art form before the terms have been defined—we are balancing at the point between tension, anxiety, and the space of possibilities."

Using information as his medium, Anderson pulls facts from online computer networks and turns them into both the form and content of his works. For example, Anderson has used online stock ticker feeds as an electronic barometer of daily business. Here both the form—the swiftly moving financial ticker tape—and the very content of what flashes online become the artwork.
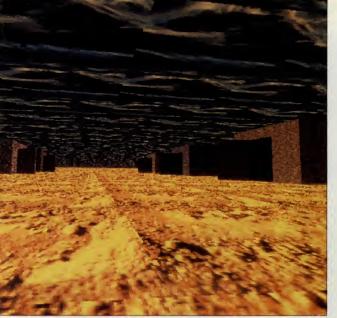
Anderson also recently curated A New Sensation, a sculptural and visual art exhibit based on digital technology. Presented in conjunction with Art in the Age of Electronic Media—a panel discussion series that explored the artistic, technological, and business context for creating digital art—A New Sensation featured work by some of the acknowledged pioneers in the field of interactive multimedia art. Participants included Jim Campbell, Lynn Hershman Lesson, Barbara Mehlman, and Sara Roberts, as well as Rinaldo and Grossman.

Each piece in A New Sensation—including The Flock—invited the viewer to participate in the experience through touch, voice response, physical proximity, or some other method, blurring the traditional boundaries between viewer and artist.

The exhibit demonstrated both the power of the new technology and its limitations. Many of the pieces appeared encumbered by their technology. In some of the exhibits, for instance, annoying delays detracted from the experience. Overall, though, A New Sensation presented a compelling vision of a radically new future for both the visual and performing arts.

Virtual Art

While many works of art encourage interaction in one form or another, virtual reality can

Jenny Holzer's World pieces explore the artistic potential of virtual reality.

completely immerse you in an artificial world. Virtual reality setups typically include a headset that displays a computer-generated environment. Sensors on the headset or on special gloves allow the system to respond to your movements, creating the illusion of movement inside the artificial environment. Although still rudimentary, virtual reality's immersive qualities let the artist completely control your perception of his work.

The first exhibit of the medium in a major American art museum was Virtual Reality: An Emerging Medium, at New York's Guggenheim Museum SoHo late last year. The show featured pioneering works of several artists already well known in other media. The presence of works by Jenny Holzer and Thomas Dolby helped suggest the form's enormous appeal and its potentially explosive future.

Holzer, best known for her politically-charged, computerized L.E.D. signs and other text-based work, exhibited a "virtual artwork" from which gallery visitors could select two distinct worlds. World One, developed with Ken Pimentel of Sense8 Corporation of Sausalito, California, features a cavernous world inhabited by "ephemeral souls," which are represented by cubes that have the same face on all four sides. These souls may engage you in

conversation or flee as you approach. Left alone, the cubes congregate among themselves.

World Two, developed with Jeffrey Donovan of Sense8, is a response to the recent events in Bosnia. As you "wander" from house to house in a stark and mutable landscape, you confront the perpetrators, victims, and witnesses of rapes and murders. You can also choose to escape the virtual horrors and seek the solitude of a rural village.

In recording artist Thomas Dolby's Virtual String Quartet, you don a virtual-reality headset to find yourself in a rehearsal space with a string quartet playing a Mozart Quartet (the actual music is played by the Turtle Island String Quartet). Developed by Dolby in collaboration with Eric Gullichsen, Virtual String Quartet is the first interactive soundworld to synchronize animated figures with three-dimensional sound. That means that no matter where you go in the virtual space, the sound seems to come

Thomas Dolby's Virtual String Quartet merges music with virtual reality.

from a particular source.

For example, as you move around the rehearsal room, the sound of the cello always appears to come from the cello, the viola from the viola, and so on. The piece also lets you interact with the animated musicians. If you "touch" them, they may launch into a jazz or bluegrass solo.

Museum of the Future

At the Networked Virtual Art Museum: The Temple of Horus, your VR headset puts you in the lobby of an imaginary art museum, where a portal leads to the reconstruction of an Egyptian temple to the god Horus. Once inside Horus's temple, created by Carl Loeffler and Lynn Holden at the Studio for Creative Inquiry at Carnegie Mellon University, the animated hieroglyphics and statues tell stories of the god and the rituals surrounding his worship.

This type of work is the first step toward a virtual museum—where you don't go to a building, but the exhibit comes to you electronically. Eventually there will be cyberspace museums in which the exhibits from around the world will come to you via a virtual-reality headset, much like broadcasts now come to you on television.

Digital Dance

While virtual reality uses technology to immerse you in another world, dance and theater do the same thing through more conventional means: light, costume, scenery, movement, text, and sound. In this context, the new digital tools are simply new ways for artists to create their worlds on the stage.

Twenty years ago, Merce Cunningham, the "father of postmodern dance," predicted that computers would figure in the future of dance. In March of 1991, Cunningham premiered a dance piece called Trackers in which much of the choreography was created on a computer program called LifeForms. "What I saw twenty years ago—the earliest efforts at something like this—were very primitive and very unclear," says Cunningham. "Now look at the technology: It suggests possibilities of time and space I've never imagined before."

LifeForms, created by a team of artists and software designers at Simon Fraser University in Vancouver, British Columbia, is a computer tool for defining three-dimensional character motion. A software program for Macintosh and Silicon Graphics computers, its interactive, graphical interface lets choreographers or animators sketch and manipulate representations of the human body. LifeForms lets them directly manipulate the representational

figure between any two positions, displaying the human form as a series of interconnected, concentric circles that move fluidly. Life-Forms also contains a large library of predefined movement sequences, a sequence editor, digitally altered variations of the images, and audio files to synch the movement with music.

"Cunningham was actually integral in the design process of LifeForms," explains Thecla Schiphorst, a Canadian choreographer and member of the Simon Fraser University design team. Since 1989, the two have worked closely together in the process of "getting the computer software physicalized and informing the design process with the knowledge of the body."

Interactive Shō

Many artists have seen the potential for digitally integrating video, images, and sound, but few have found a way to get the image out of the confines of the computer monitor. San Francisco-based theater artist George Coates has developed an innovative new way to combine live action, film, video, music, and digital images into a real-time performance mix on stage.

To make it even more topical, he has used the technology to produce a play about life under the influence of new digital technology. In Box Conspiracy: An Interactive Shō, Coates mixes excerpts of television, movies, video, and textural photo images to show characters confronting life in a closely monitored world of 5,000 cable channels. Projecting the various images on a special screen, Coates lets the live actors on stage seamlessly interact with objects or other characters in the projected images.

"By using a stage with textured graphics for the scenery, I am using a soft set [not constructed scenery] in Box Conspiracy," explains

Choreographer Merce Cunningham uses LifeForm software to create digital dances.

Coates. "In the future, soft sets will provide the illusion and depth of 3-D scenery just through light and graphics. But you have to be careful not to have the technology overwhelm the content." Right now, the audience must wear cardboard 3-D glasses to catch the stage effects.

Eventually, Coates plans on wiring the seats in his theater so that audiences can participate to influence the story. One possibility might be for audience members to control the movement of fireflies on the stage, choosing which areas to illuminate. Helpful audiences could guide characters who were lost back to a desired path. Other, feistier audiences, might not, thereby changing the direction of the story.

Despite Coates's concern with content, however, most critics still contend that he needs to put even more work into story and character development.

George Coates's Box Conspiracy mixes electronic images with live actors.

They note that although striking visual images matched with intriguing sounds can be stimulating at first, a steady stream of similar effects tends to desensitize the audience.

Multimedia Memories

That's a problem for a lot of high-technology art, but multimedia storyteller Dana Atchley tries to get around it by keeping his performances intensely personal. In Next Exit, for example, Atchley enters the stage, sits next to a screen displaying a "video campfire," and begins to spin warm and humorous autobiographical tales of his unconventional life on the road. The set for the piece is a large-screen projection of a computer monitor that displays various symbolic icons, connected by graphical representations of the "road." Using a wireless remote mouse, Atchley opens the icons, each revealing elements that help convey the images and stories of his life.

"Multimedia is nothing new," says Atchley, "But the power of computers to integrate and control various media is—and it's very exciting. For the first time I am not limited by available technology. We're talking about the development of a whole new way to store our memories—the Electronic Family Album."

For Atchley, the roots of interactive multimedia lie in decades of work combining narrative storytelling with images and music in mixed-media presentations. "I come from a unique family that was obsessed with collecting images of our experience," explains Atchley. "On my father's side, we've got a photographic history dating back to 1856 and on my mother's side since 1890."

Next Exit incorporates 21 archival for-

The Interactive Multimedia Festival

I f you want to experience the best in multimedia art, plan a trip to Southern California this June. The Interactive Media Festival is sponsoring an important gallery exhibition at the Los Angeles Convention Center in conjunction with Seybold's Digital World show. On June 6–8, the IMF will also feature The Festival Awards Show, a major interactive concert at the Universal Amphitheater.

Perry Hoberman's Faraday's Garden creates a landscape of electric appliances.

Backed with millions from Motorola and produced in association with the American Film Institute and Cunningham Communications, the month-long exhibition will show off approximately 25 leading examples of computer-based multimedia and interactive art.

According to festival director Lisa Goldman, an all-star panel of some 75 international multimedia luminaries has nominated more than 90 works to display in the gallery, including more than two dozen art pieces and installations.

"We have searched the world for a glimpse of the new forms of expression resulting from the collision of media technology and art," Goldman says. (Interactive Media Festival, 800-573-1212)

Nominated art works include:

Adelbrecht: Created by Dutch artist Martin Spaanjard, Adelbrecht is a wobbly computerized ball equipped with sound and touch sensors. The anthropomorphized ball likes to be petted by visitors but will get angry and turn himself off if he gets stuck.

Chaotic Rhythms: Paul DeMarinis, based in San Francisco, uses a Macintosh, a special board, and a program written in the MAX musical language to control an array of mechanical devices in a chaotic feedback system. Participants can touch ropes and motors to affect the musical outcome.

Childhood/Hot and Cold Wars/The Appearance of Nature: New York artist Ken Feingold's interactive sculpture uses 24 hours of archival video chronicling the Cold War. Participants control this cultural history by rotating a small globe around a larger celestial sphere as the images are presented on the face of a clock.

Faraday's Garden: Based in New York, Perry Hoberman's Amiga-based installation lets participants walk through a landscape of electric appliances, power tools, wires, and switches. Each step triggers specific and seemingly random interactions with the various devices.

Handsight: Based on a 19th-century peasant's bottle, this piece by Germany's Agnes Hegedüs lets participants place a tracker "eye" inside a huge glass bowl, revealing a computer-generated Calvary scene. Special software running on an SGI Reality Machine lets participants explore this new world.

Agnes Hegedüs" Handsight uses an eye as a cursor.

SMDK: Designed by Christian Hübler at Knowbotic Research in Germany, this 3-D sound sculpture features sound samples collected over the Internet. Participants wander through a virtual-reality space to reach out and touch sounds represented by light and color.

Terrain 01: Created by German artist Ulrike Gabriel, this biofeedback installation lets the participant control a group of automated robots using only his or her mental states.

Virtual Reality Laboratory: Developed by the Art Technology Group in Cambridge, Massachusetts, this experience begins in a model of the VR Lab theater itself. It follows the travels of a face as it is picked up by a video camera and displayed in real space. Three large projection screens in the circular theater display the images from the VR headsets.

Winke Winke (Wig Wag): This Austrian project, developed by Gerfried Stocker and Horst Hörtner, mixes old and new communications technology. A robot positioned above the town or neighborhood uses

The Virtual Reality Lab by the Art Technology Group uses faces to explore the concept of virtual reality itself.

semaphore language to visualize messages modemed to it from a computer. A telephoto video camera set up in the next town picks up the semaphore signals and sends them back to the originating computer screen.

—Fredric Paul

mats in all—from early home movies shot in the 1920s to videotape and QuickTime movies assembled in the 1990s.

"It's even interactive," laughs Atchley. "Rather than being locked into a sequence of projected images, I can skip the stories I don't feel like telling on any particular evening."

Restricted Access

While interactive multimedia systems and tools such as those used in The Flock or Next Exit are beginning to change the fine arts, it's likely to be several years before such technology becomes integrated into the daily lives of average Americans. Limited access for both artists and audiences—primarily due to prohibitive costs—remains the greatest obstacle for those who want to explore the possibilities of digitally based art.

"You have to beg and borrow to get your hands on this stuff," explains Coates. "No one is going to give it to you. You need to

In Next Exit, multimedia storyteller Dana Atchley uses a video campfire to spin his autobiographical tales.

have a compelling reason why these technology people would want to work with you." Coates has convinced Silicon Valley engineers to work with his company, George Coates Performance Works, through an organization he created called SMARTS (Science Meets the Arts). SMARTS now gets funding from the National Endowment for the Arts.

"Access is the biggest issue facing artists today," explains Anderson. "As it stands now, the technology is coming online, but the content is in its infancy. Without content, there is no product, and without product, there are no markets." Technology companies are dependent on artists to make this happen, so some of these companies are beginning to invite major artists to play with the tools and create new works.

As we near the end of the 20th century, the arts are once again being challenged to respond to a period of social and cultural upheaval. If artists can commandeer the tools of interactive multimedia and make their voices heard over the hum of the information superhighway they may help our culture understand the impact of living in an age of information.

Timothy O'Brien is the artistic director of One Abstract, Inc., a San Francisco–based company. Jeffrey Winter and David Hyry also contributed to this story.

Our electronic
adventurer gets
himself out of
the frying pan
and into the
kitchen.

how my PC

got me cooking

OKAY KIDS, let's take a break from the shoot-'em-ups and cyber simulators. Put down your joystick and unplug your goggles. It's time for your cooking lesson.

That's right, I said cooking. You know what that is, don't you? The MultiManiac sure does. I was wokking sea bass in black bean sauce before you even started on solid food.

But lately I've come to realize that those years at the Cordon Bleu were all for naught. There's a better way to learn to cook—the multimedia way, using a CD-ROM cookbook.

For all you wireheads who haven't figured it out, cooking is more than a process by which we turn raw vegetable and animal materials into digestible fuel for our internal engines, thereby providing the power we need for another eight-hour round of 3DO. It's also the ultimate multimedia experience— one that involves all five of the senses and not a few of the primal drives. The feel of raw dough between your fingers. The aroma of slowly-roasting garlic. The sizzle of sautéing meat. The sight of a well-arranged plate. And the tastes...oh the tastes...

Plus, like I said, cooking goes right to the heart of all our basic instincts. In the course of preparing a great meal, you experience hunting and gathering, and sometimes even killing. You provide sustenance for yourself and your family. Or you can seduce. Indeed, the power of food in this area can't be overstated. Forget working on your belly at the gym. Forget buying a hot car to attract babes. Forget walkin' the walk and talkin' the talk. Just learn to cook. Anyone who can't be seduced by Tuna Carpaccio with a Wasabi sauce on the side isn't worth your time, anyway.

So how do you plug into this sensory carnival? You use your computer, of course. The MultiManiac will show you the way.

Now before we begin, I must caution you not to make the mistake I did. Don't set up your PC next to the stove. I almost set my keyboard on fire, and I got into terrible trouble trying to follow recipes on screen. Maybe you could figure out how to cursor down to the next page of instructions when your hands are covered with brioche dough, but I couldn't. I ended up trying to click the mouse button with my nose, which wasn't as funny as it sounds. Eventually, I learned to leave my PC upstairs where it belongs and use my printer to obtain a portable copy of selected recipes.

Okay, now that you're all strapped in, we're ready for takeoff. Fortunately, we've got plenty of destinations to choose from. Once I learned that CD-ROM cookbooks had become a reality, a quick visit to the software store yielded four completely different approaches to the subject.

The New Basics

Stop number one: The New Basics Electronic Cookbook from Xiphias. In keeping with its Basic orientation, this is the only DOS-based disc of the bunch (the others all run under Windows). And I had to spend hours fiddling with my CONFIG.SYS and AUTOEXEC.BAT files just to get this cookbook to run.

Still, while the New Basics cookbook's DOS-based access left a sour taste in my mouth, Xiphias sweetened the pot with 1,800 flavorful recipes from the Silver Palate Cookbook series. Access problems aside, this cookbook

by Paul Bonner

ILLUSTRATION BY MARCIA STIEGER

does it all, spicing up the recipes with color photos of the food, digitized-sound cooking instructions, tips for adjusting portions, and just about everything else you'd expect from a great online cookbook—except for the ability to generate a shopping list.

I searched for recipes according to the stuff I found in my fridge, then tantalized my hungry wife with the disc's enormous collection of mouth-watering menu ideas for everything from a cozy supper to a Russian brunch to an election night celebration dinner. We're not talking baby recipes here, either. Even the Multi-Maniac didn't have all the ingredients on hand for Grand Gaucho Paella, but my local fish store yielded most of them. A few clicks of the mouse and a few whisks of the spatula later, I found myself in saffron heaven. (Xiphias; 310-841-2790; CD for DOS, $69.95)

Prague and Prejudice

John Schumacher's New Prague Hotel

Cookbook from Quanta Press—the first of the Windows-based programs—left me in some lesser place. Sure, it was full of tantalizing interpretations of eastern-European favorites—everything from Cheese Soufflé Bratislava to Pork Chops in Savory Plum Sauce to Poppy Seed Cream Cake.

But does man live by a great collection of fattening, high-cholesterol recipes alone? The MultiManiac says "no." In the multimedia information age, interface is everything, and John Schumacher's stinks.

No sooner had I started pointing and clicking my way through the New Prague Hotel than my screen was full of little windows, some listing recipe titles, others listing sound bites (consisting of Chef Schumacher talking about cooking theory), others actually presenting the recipes I'd chosen to view. But, there was no way to generate a shopping list or to plan a menu for an entire meal or even to print out a recipe.
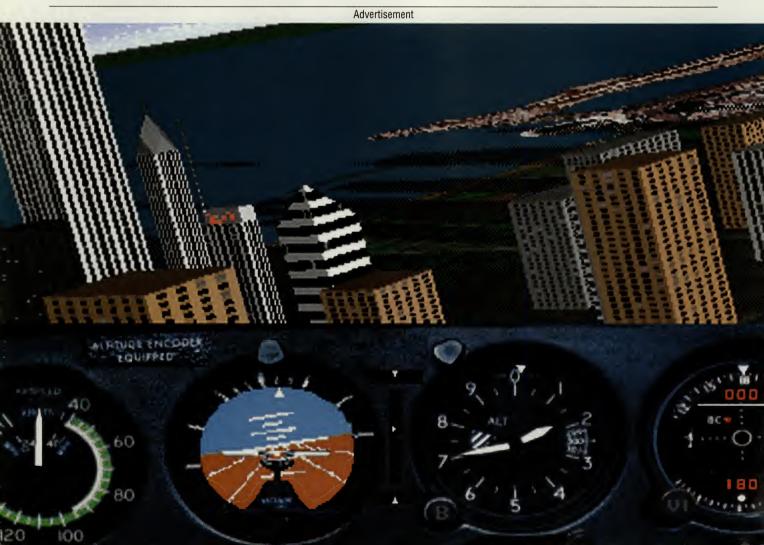
I did manage to print a few recipes by copying them from the recipe window into a word processor, but that was an unwarranted and annoying extra step. Plus, my offer to make Baltic Herring Salad for eight of my closest friends got a stony reception. So I put the Prague disk away in search of something more enticing. (Quanta Press; 612-379-3956; CD for Windows, $29.95)

Better Home Cooking
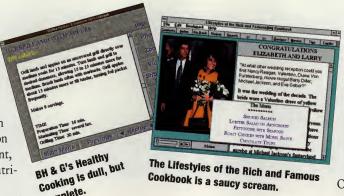
Multicom's Better Homes and Gardens Healthy Cooking CD fit that bill nicely. It's got a spiffy interface, lots of digitized video, and all kinds of other neat stuff. Plus it's the only CD-ROM that's ever reminded me of film director Robert Altman's cult classic

Three Women, where Shelley Duvall's character organizes her recipes by the time they take to cook. The BH&G guide doesn't go quite that far, but you can search for recipes based upon their per-serving calorie count, sodium level, and other nutritional guidelines.

Unfortunately, cooking with Better Homes and Gardens is a little like dancing with your sister. Even if you get all the steps right, it's not all that exciting. The recipes are practical—with instructions for everything from beating egg whites to thickening gravy—but a bit too dull for the MultiManiac's refined tastes. I'm not saying that I don't like eating at Denny's, but still, who are you going to seduce with Tuna Noodle Casserole? At least it makes shopping a breeze, since it prints out a custom shopping list for your meal. If you really need to learn to cook, start with Better Homes and Gardens. (Multicom Publishing; 800-850-7272; CD for Windows, $59.95)

BH & G's Healthy Cooking is dull, but complete.

The Lifestyles of the Rich and Famous Cookbook is a saucy scream.

Rich and Famous

The MultiManiac, however, will be hobnobbing with Robin Leach's rich and famous friends. What can I say?—the man's taste is impeccable. No, I can't say that, but he has put together an amusing cookbook.

I know, I know, that sounds like an oxymoron, but The Lifestyles of the Rich and Famous Cookbook is a saucy scream, complete with digitized photographs and Robin's inimitable voice-overs describing the star-studded events. There's Liz Taylor's most recent wedding, Robert DeNiro's party at the Cannes Film Festival, and, lest I forget, Ernest and Tova Borgnine's renewal of their wed-

ding vows. From these tre chic soirées come many of the recipes, with the rest springing from the home lives of celebrities ranging from super Bond Roger Moore to super model Elle MacPherson.

Personally, the M'Maniac put in a lot of apron time practicing Elle's recipe for Smoked Salmon Bruschetta. One of these days she might invite me to one of her informal brunches, and won't she be pleased when I know exactly how to proceed after I squeeze into the kitchen.

Elle's isn't the only good recipe on the disk. I was tempted by everything from Brooke Shields' Spring Rolls to Caroline Hunt's Wood Grilled Veal Loin—and I intend to try most of them out. First though, I might have to hit the gym. Working with all these CD-cookbooks has been hell. I've put on 15 pounds, and my grocery bills have gone through the roof. But I've sure been popular with hungry friends, and now I know what to fix for Elle MacPherson if she and Ernest Borgnine ever drop in for brunch. (Compton's NewMedia; 800-862-2206; CD for Windows, $39.95)

The only thing it doesn't simulate is ear popping.

If it were any more real, your chair would be in a 30° bank. Our new Microsoft® Flight Simulator™ has four planes, each with its own instrument panel created digitally from actual photographs. There are storm clouds and sunsets to fly into. Crashes are scarily real. And you can fly to airports anywhere in the world. It's just one of the realistic simulations we have waiting for you to take control. Everything is at your reseller. So, take off.

Microsoft Home

State OF THE Game

E² REVIEWS, TIPS, AND STRATEGIES FOR THE HOTTEST PC, MAC, AND CD GAMES

WHAT'S INSIDE

Outpost

PREVIEW

By Peter Olafson

Outpost is the crowbar that breaks the mold that formed the games that came from the House that Ken and Roberta built. Sierra's space-exploration and colony-building game for Windows—planned for spring release—is light-years away from any previous Sierra release.

In fact, Outpost is barely a Sierra game at all, save in name. It's much more like one of Maxis's sophisticated software "toys" with a story attached.

A Schwarzenegger-sized asteroid is headed our way. Earth must establish an off-world colony ASAP in order for mankind to survive. Naturally, you are the agent for that settlement's creation.

And this is no small task, friend. It means sending probes to nearby star systems of your choosing. It means deciding how best to invest a limited pool of resources in supplies for the trip—in bare necessities like food and life support that a fledgling settlement needs to survive, or in more sophisticated but expensive tools like satellites that might smooth the path to recivilization later. And, eventually, it means leading a space voyage in a sort of rocket-powered birdcage to an inhospitable new world.

The last thing you probably need at that point is someone squawking, "Stop the ride—I want to get off!" But that's exactly what happens: En route to mankind's new Eden-in-training, you face a rebellion led by (I am not making this up) a dentist. The mutineers, however, wind up heading off into deep space. (They're lost, but they probably all have great smiles.) Needless to say, you haven't seen the last of them—for better or for worse.

It's a convenient turn of events for the moment, though, as it lets you get down to business without distractions. And the business at hand is the job of transforming an airless brown rock in the middle of nowhere into home sweet home. And it is only here, finally, that Outpost emerges in full flower as a turn-based, Sim City-like colony builder.

Starting with just a "seed" factory, you'll create and dispatch dozers to smooth the surface for

Your first task: Dispatching the probes. (If you go to Alpha Centauri, do we meet Dr. Smith?)

Having moved to the fuel station a[t] starship spends two years loading messages have been received fro[m] last ditch attempt to divert the inco[ming] failure. The colonists look to you a[s]

future construction, all of which you see from a Sim City 2000 point of view. Diggers delve into the planet, opening up as many as four underground levels for settlement and widening the ones that exist. Miners extract ore to be processed and converted into usable resources. Luxury-goods factories will pro-

duce frivolous products (like eight-track tapes, wax lips and bowling shoes), and labs can think up new and practical ones along a whole multi-branched tree of applied research.

Command centers provide feedback on the emerging picture, and the attractively named SPEW centers recycle. Other centers fulfill needs as diverse as a breathable atmosphere and a place for the colonists to bed down. The list goes on and on, and naturally, as in a Sim City, they are interdependent and subject to rules and regs. For

Don't you hate packing? Here's where you decide what to take along for the ride in Sierra's Outpost.

Settling in at your new home. No landscaping to speak of, and the nearest convenience store is too far to walk.

rotating planet to a closeup of the landing site to the structures available for building. There's really nothing to it in terms of game mechanics; it's finding the optimal balance of parts that's tricky.

This is certainly not the first game of its type—for instance, Gremlin Graphics' Utopia and the followup, K240, are in much the same vein—but the concept has never been done up in such elaborate, burnished style and with so much info at your fingertips.

All the little buildings appear to have been rendered in 3-D—they've got that giveaway glow—and in the final version, each will have its own distinctive and purposeful animation.

Sierra's been emphasizing the fact-based aspects of the game, which they're calling a simulation—but don't let that frighten you off. The idea is simply to be authentic,

Jupiter, the colonization
ts tanks. During this time, no
Earth. The AI simulation of the
ing asteroid showed only
their only hope for the future.

Whether we're alone in the universe or not, you're definitely on your own in Outpost.

instance, laboratories, living quarters, and luxury-goods factories can be built only underground, and agricultural domes only on the surface.

You control all this by pointing and clicking on handsome screen-top windows that range from the

with a good grounding in science.

By the same token, a fact-based approach doesn't make Outpost any less a game or less fun. And fun it is. (My only concern is that animations in this early version of the game were rather slow on a 486 with a standard-speed CD-ROM.) And if I can enjoy myself as thoroughly as I have with this far-from-complete version—missing the AI, animations, and freedom of choice, among other things—you'll have to separate me from the final take with a crowbar. (Sierra On-Line; 800-757-7707; CD-ROM for Windows, $69.95)

Double Switch

By Wes Nihei

Of course it's fun to spy on your neighbors. A little voyeurism never hurt anybody, right? But naturally we don't admit that we actually do it.

That's okay, because a new Sega CD called Double Switch lets you spy on your neighbors without the guilt. The game requires you to monitor the activities of real actors engaged in real-time action in order to be at the right place at the right time to trap the bad guys.

An Egyptian treasure was hidden in the Edward Arms apartment building by the late, eccentric architect, Lionel Atwater Edward III. Now, sinister "strangers" are muscling their way into the building to find the legendary treasure. The unwitting tenants are unwilling victims, but they slowly get hip to the mystery as the game progresses.

You view the sinister goings-on in the mysterious Edward Arms via a system of remote cameras. The cams are set up in six of seven rooms in the Arms. The seventh room is the basement "prison" of Eddie, a young man who grew up in the Arms and built its security camera system. One of your goals as you advance through the game's three acts is to extricate Eddie from the basement.

Eddie needs you to rescue him from the cellar!

However, your primary challenge involves mastering an elaborate system of traps which Eddie has constructed to snare intruders. That means monitoring an electronic burglar alarm system, switching to the camera in a suspect room, setting a trap, and tripping the trap when someone (hopefully an intruder, not a tenant) gets close to a trap trigger.

It's not as simple as it sounds (of course), since snaring the undesirables requires planning and strategy. You can't capture all the bad guys right away because they reveal code numbers, which Eddie needs to open the basement door, and they also unearth clues to the treasure's location. But, if you fail to catch enough

Deborah Harry, as the manager adds star appeal.

villains or secure the codes, Eddie boots you out of the game and back to the opening credits.

Double Switch also forces you to be fast with your fingers. You only have a few seconds to determine which trap someone is headed for and then press the correct controller button two times to set the trap and a third time to spring it. You can preset traps in any room, but if you set too many you blow the building circuits and have to start all over again.
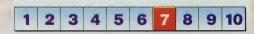
While you're trying to beat the clock, take the time to enjoy the graphics. Although they retain the now-familiar grainy Sega CD look, the game environment and the actors' costumes have an entertainingly dreamy, art deco, past-meets-present appearance.

Double Switch has star appeal, too. Movie actor Corie Haim ("The Lost Boys") plays Eddie. Deborah Harry, formerly lead singer of Blondie, plays the sultry apartment manager. Thomas Dolby ("She Blinded Me with Science") created the music soundtrack. (Sega of America; 800-872-7342; Sega CD, $59.99)

1	2	3	4	5	6	7	8	9	10

An enjoyable mystery that will challenge your sleuthing skills even if the story's not too sophisticated.

Flight Sim Toolkit

By Tom "KC" Basham

If you've ever been disappointed with any of the flight-simulator games because they didn't have the right graphics, a cool cockpit layout, or a particularly interesting flight model, Fight Simulator Toolkit might be your solution. When you want something done right, as they say, do it yourself.
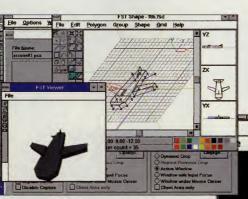
Fortunately, my test run with this program wasn't a government project where

Here's my simplified rendition of an F-86. It's a miracle if this thing can fly.

we have to "do it by the book," since Toolkit's manual is skimpy. And all the diagrams in the margins are eye candy—they have nothing to do with the text. But this was play time—I was ready to wing it.

I wanted to create a custom-designed Korean War simulation since there are none on the market today. So I started the FST Project Manager and created a blank new world. Although many predefined aircraft, vehicle, and building shapes come with the program, I looked in vain through the clip-art catalog for anything from the 1950s—there was nothing resembling an F-86 or a MiG-15. That meant I needed to create even the plane from scratch. Sort of like a defense contractor, right?

I moved to the 3D Shape Editor and created a few generic polygons, rotating them along different axes until I understood how the Shape Editor

worked. Then I set to work on an F-86 Saber. Eight polygons and 15 minutes later, my screen displayed something vaguely airplane-like—something you might recognize as a Saber if you already knew what it was. (You know, like Congress looking at a Stealth bomber.)

A compilation of many small polygons instead of a few large ones would have produced a better shape, as evidenced by the highly detailed shapes shipped with FST. Items such as robots, ground vehicles, buildings, and numerous fighter aircraft demonstrate the Shape Editor's capabilities. But because I was eager to fly, I decided my crude F-86 would do for now.

Next, I needed to design the cockpit. According to the manual, FST contains 21 different gauges and 13 different gauge styles. First, you load a graphic of the cockpit into the Cockpit Editor, tell the program which gauges to display, then drag those over the PCX file, aligning them with the

In the Cockpit Editor, you describe and place the cockpit instruments.

cockpit art. I settled for one of the 5 included cockpits that looked reasonably F-86ish and loaded it. It took about 20 minutes to position the desired gauges.

Once you've designed the plane's guts and its exterior, you need to define the flight model. One called MYST stood out conveniently. I took it from the library and loaded it into the Model Editor, which allows you to set lift, drag, pitch and yaw stability, roll and pitch rates, roll and pitch inertia, weight, wing incidence, wing efficiency,

This is more like it. An Expert's Rendition of an F-14.

stationary on the runway.

Domark's technical support confirmed my observations and indicated a patch would be available soon to correct these problems. In the real world, that's called a cost overrun.

Despite the instrumentation problems, the flight model worked, so it was time to start on the rest of the world. I found painting landscape, adding mountains and fractal effects, and adding objects very straightforward. Creating other life forms posed a few challenges, though.

All life forms must begin existence at a hangar or a depot. The hangar or depot defines what type of object it generates and what path that object will follow. Multiple paths can be associated with multiple hangars, allowing complex defense networks. The life forms scramble and intercept when an enemy stumbles within 50 kilometers of the hangar. Unfortunately, I still don't know how to define an object as "friendly" or "hostile." My small world is a simple all-of-them against one-of-me scenario—although the world editor allows much more complex designs for those in the know.

In roughly four hours I created a semi-flyable aircraft, a randomly mountainous terrain, two unmoving enemy aircraft hovering like sentinels, and base that spawned an indeterminate number of enemies when I approached, all wrapped into a tidy standalone package ready for store shelves.

Given enough time and dedication, you can use FST to create some amazing worlds. You can't build your own version of Falcon 4.0, but you can create a rich world and experiment widely with flight modeling. And you can see how to milk Congress out of mega-bucks with planes that *might* or, might not fly. (Domark/Spectrum HoloByte; 800-695-4263; Windows, $89.95)

and stall angle. Except for weight, there's no indication how these variables and their allowable value ranges relate to the real world. You can edit a top-down view of an aircraft to adjust wing and control surface sizes, but this technique is very coarse and limiting. Although you can tweak many flight-model variables, you must work within the limits set by the Model Editor. Among the omissions I noticed were spins and a stall buffet.

Although I hadn't created a world yet, I wanted to take the new jet for a spin. After a few test flights I realized Congress would never approve spending for my project. The prototype was unstable, under-powered, and overweight. But they would give me money for modifications, I was sure.

After an hour's worth of tweaking, I finally generated a flight model that could claw its way slowly into the sky. I doubt it resembled an F-86, but it did fly. Once in the air, I had time to concentrate on my instruments and found several bugs. Although the vertical speed digital readout functioned, the vertical speed gauge didn't work at all. The G-force and AOA (angle of attack) indicators bounced madly, displaying erratic numbers. The G-meter bounced between +5 and -5 while sitting

Here's where you can give your creation life — in the Flight Model Editor.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | **8** | 9 | 10 |

Although it needs a better manual and aerodynamic statistics for well-known aircraft, FST was still very enjoyable.

The Digital Arena: Four Games that Take the Fight to the PC

By Wayne Kawamoto

There's nothing like a little hand-to-hand combat to get the blood flowing and heart pumping. If you're looking for a fight, your PC's ready to oblige with virtual contestants that play for bloody keeps.

In fighting arcade games, Street Fighter II and Mortal Kombat reign supreme. But as these titles muscle their way onto the PC, DOS publishers aren't about to dive and concede the bout. In the opposite corner, ready to take on Hi Tech Expressions' PC versions of Street Fighter II and Mortal Kombat, you'll find the challengers, Microleague's Body Blows and Megatech's Metal & Lace.

All these games offer arcade fighting action from a sidelong, spectator's perspective, and you can choose to fight the computer or a friend. After that, the graphics, animation, power moves, and action separate the men from the toys. In the outright brawl for PC dominance, only one ends up at the top of heap.

Mortal Kombat

Now PC owners can experience that arcade taste of lethal and bloody battle. Mortal Kombat comes to the PC intact, with all of its now-famous characters, hard-hitting and fast action, graphics like the original, and brutal finishing moves.

On the PC, Shang Tsung is still one bad dude who holds an annual tournament. Warriors out for guts and glory try to take on all comers, including their own mirror images, the four-handed Goro (he's probably a great juggler, too), and ultimately Shang himself. All of the ruthless moves are here, including heart tugging (not the emotional kind) and decapitations.

Again, you'll want a joystick to execute the power and finishing moves, though keyboard play can be effective. While the game's controls are responsive, they don't live up to those on the cartridge platforms. But where SFII flails in slow motion, Mortal Kombat moves much like the original arcade version. It's all here in look and feel, making Mortal Kombat one satisfying game, as faithful a translation as you'll find on any home system. (Hi Tech Expressions; 800-447-6543; $69.95)

Body Blows

Microleague's for-PC-only Body Blows would be better named Street Fighter Lite. It offers brisk, well-drawn animation and responsive keypad and joystick controls, and it's a hard-hitting blast to play. Here you duke it out with a series of opponents representing different fighting styles, including a kung fu expert, wrestler, boxer, Amazon, and ninja.

Each character has a signature power move that executes with basic joystick operations, not the complex digital contortions of SFII and Mortal Kombat. This is good for beginners, but perhaps boring to real digital fight fans who revel in the skill it takes to complete special moves. Body Blows lets you repeatedly use the same moves, which detracts somewhat from the game.

With a sound board, you'll hear every excruciating grunt and blow. Despite the negatives, Body Blows is exciting to play and will give you some PC kicks. (Microleague; 302-368-9990; $39.95)

Body Blows offers decent PC fighting, but you can get repetitive with the moves.

Mortal Kombat lives on the PC in an excellent arcade port.

1	2	3	4	5	6	7	8	9	10

Mortal Kombat puts up the best fight on the PC with performance that rivals the cartridge systems and more of the gore associated with the mega-popular coin-op version. It definitely rips the CPU out of the others.

1	2	3	4	5	6	7	8	9	10

Street Fighter II

Millions of quarters and millions more cartridges can't be wrong, but on the PC, Street Fighter II is slow, though graphically true to its coin-op origins. Unless you've been punch-drunk, you know

Street Fighter II (SFII) as that popular fighting game of global proportions. Choose a character as your own and fight representatives from around the world, each with different strengths, weaknesses, and deadly moves.

In theme and graphics, SFII remains intact. But in play, it's a a lot like playing in Jello compared to its cartridge cousins, with controls and onscreen

Playing the PC version of Street Fighter II is like playing in slow motion—a major disappointment.

action equally sluggish on my 66MHz 486. The PC version just doesn't deliver the Dragon Punch of performance. Even the sound effects wouldn't play on my test system (through a Pro Audio Spectrum 16), but the obnoxious music came through loud and clear.

The controls, with either joystick or keypad, are familiar. To execute power moves like Ryu's fireballs or Guile's sonic booms, you'll want a joystick. But because the PC responds so slowly, the power moves are hard to perform. Even the easy ones, like Honda's hundred-hand slap and Blanka's electricity, have a delayed response. In the end, you'd have to be really Street Fighter desperate to play this game on the PC. (Hi Tech Expressions; 800-447-6543; $59.95)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Metal & Lace
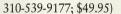
If Metal & Lace: The Battle of the Robo Babes sounds like science fiction schtick, it's not. It's worse: B-grade arcade fight sequences and an obnoxious sexist plot.

In the game's future, a remote island offers street brawls where contestants pay a fee to fight, and later pay with their own blood in battle. In these futuristic pit-fights, combatants battle in mechanized armored suits. Besides offering protection, these motorized suits are essentially robots that have their own fighting characteristics, strengths, and power moves.

Since great fighters are made, not born, you'll have to buy armor and necessary components to make yourself stronger, and fund your fighting machine (through a friendly neighborhood loan shark).

The game features 2-D fight sequences that you control by joystick or keyboard. Since there are only four tournaments, the confrontations remain far too difficult. Most will find this game simply frustrating to play.

Megatech differentiates its games with Anime art, those stylized and typically pornographic cartoons that are popular in Japan. As you win, Metal & Lace offers pictures of cartoon women in various stages of undress—a separate NR-18 version offers cartoon nudity. It's a second-rate fight game that's frosted with sleaze. Send this loser down for the count. (Megatech Software; 310-539-9177; $49.95)

| 1 | 2 | 3 | **4** | 5 | 6 | 7 | 8 | 9 | 10 |

Metal & Lace uses some role-play elements to build up to the fight.

Jump Raven

by Bob LeVitus

Welcome to the future—Cyberflix's frightening version of New York City where everyone is armed and no one is safe. Skinheads have hijacked pods containing the last remaining genetic samples of Earth's wildlife, and it's up to you, renegade hovercraft pilot Jump Raven, to get them back.

A spectacular animated introduction followed by a briefing on your hovercraft's capabilities sets the scene. Then it's off to the Weapons Lady at the Arms Mart, where you'll equip your hovercraft with lasers, missiles, bombs, and defensive weapons of varying lethality and price. Once armed, you select a copilot. Choose carefully: Each of the six candidates has particular strengths and weaknesses in battle. Finally, choose your optional background music—hip-hop, grunge, new age, or heavy metal.

Once you're briefed and outfitted, you hit the streets of the Bronx to do battle with the Skinheads. (There are two even more dangerous boroughs should you survive the Bronx.) The action can be heavy. So while you're blowing away enemies as fast as you can, don't forget to rescue those all-important pods.

Jump Raven can deliver enemies and challenge with ferocious speed—as long as you've got enough computer for it. On my old Macintosh LC it ran lethargically—playable, but just barely. On my IIfx it was a lot better—smoother, faster, and much more responsive. Due to its clever design, even on a slow Mac it's still faster than most other CD-ROM titles.

Four levels of difficulty (training, beginner, intermediate, advanced) and a wide variety of weapons, music, and copilots keep this game interesting even after extensive play. Jump Raven, with its clever story line, detailed and often amusing online background "database," killer animation, and frenzied battles, is an excellent entertainment value that raises the bar for CD ROM entertainment to new heights. (CyberFlix; 415-813-8040; CD for Mac, $69.95)

The opening animation is designed to grab your attention. It does.

Choose your copilot carefully based on his or her strengths and weaknesses.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Jump Raven's variety—in weapons, copilots, theme music, proficiency levels—and its intense arcade action insure you'll play frequently while remaining challenged.

GAME-WINNING TIPS

When you first start playing, allow your copilot to handle all three chores—navigation, hover control, and arms control—and watch carefully what he or she does. You'll learn a lot.

Command-period lets you skip past nonessential video sequences (extremely useful after you've seen them a few dozen times).

Cruise missiles and other smart weapons are expensive but worth it—you'll blow away more enemies and be awarded more money (for killing them) in the long run.

Use your smoke screens to facilitate docking with the fuel truck. Otherwise, your enemies may blow it up before you refuel.

Listen to your copilot. If you hear him/her say "incoming heat-seekers," press the space bar to deploy your defensive weapons (assuming you have them).

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Clamphead will be waiting to present you with trophies and prizes. But remember, it's not horsepower that'll get you there…it's brain power. So hitch a ride with Media Vision's CD-ROM title Road Scholar.™

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Escape from Monster Manor

By Rick Raymo

Do a diabolical dance with death in Escape From Monster Manor, Electronic Arts' title for 3DO. Fight your way through demonic domains shooting specters, collecting power-ups and plumbing the depths of 12 levels of intricate mazes in a search for

Nice 3-D effects from the intro.

pieces of a talismanic puzzle. This one-player disc offers fight and fright to action gamers with a hankering for something other than ported PC and Sega CD products or the dreaded edutainment games.

Immortal Kombat

The plot is more burial than story—it's strictly a setup for the shoot-'em-up. Some Talisman kept the undead banished from our realm. The magic trinket has been broken and scattered throughout the manor. Find the pieces, save the world. Die, and the undead kick booty. So much for story content.

You get to traipse through the place and, using your high-tech bug-zapper of a gun, electrocute disembodied heads, ghosts, grim reapers, and other varieties of lively dead.

In your travels through each 3-D maze, you collect keys that will open any locked door, but (here's the rub) there are always fewer keys than doors, and

You'll have to find alternative methods of entry into these rooms.

you have to make correct guesses. You have limited life and ammo and must find more of each to get through each area. Combat the no-

longer-mortal and search the maze. Once you've found your chunk o' Talisman, you must then find the portal to the next level.
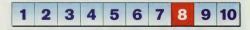
It does look suspiciously like Wolfenstein—Spear of Destiny for the PC, but without the Nazis. For those who haven't played Wolfenstein, this one will be fresh and new. For those who have, you'll find that Monster Manor exploits 3DO capabilities with astounding 3-D effects, speed, sheer number of colors, and sound quality unheard on any other platform. Even more, with the size of the mazes and the often frantic pace of battle, this one feels bigger, better, and more realistic. There are times when you might actually get an inkling of what it's like to be a real cop in a building full of bad guys. Only so much ammo, turn into a corridor, *look left, pivot right* (oh damn, it's over), and *shoot, shoot, shoot!* Feel is an intangible and oh-so-important facet to the gaming experience, and this one feels right.
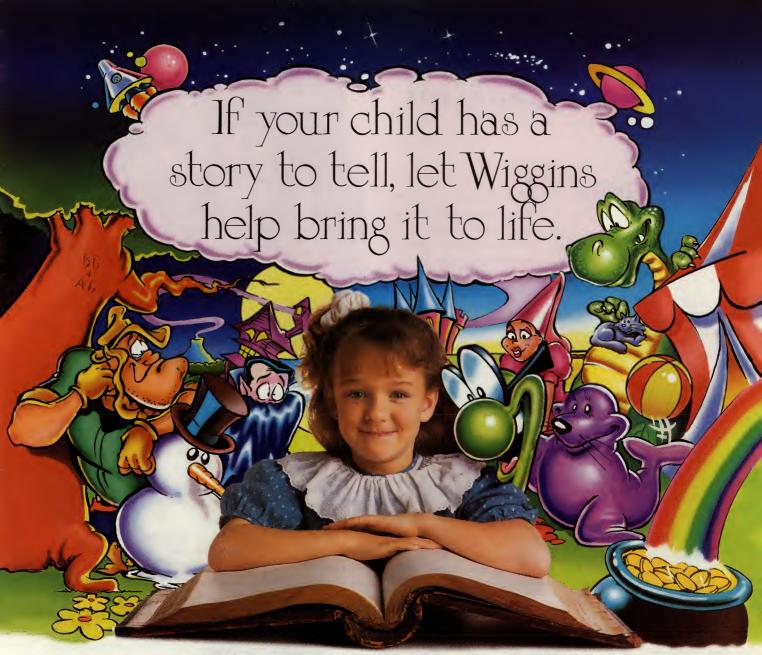
What's the gist? Escape From Monster Manor has amazing 3-D effects, great ghoulish music and sound effects, good pacing (from frantic to slow and tension-inducing), and a very solid feel. This is a nice change from the limited options available on the 3DO for the nonce. So what if the idea was ripped off? This game is fun. (Electronic Arts; 800-245-4525; 3DO, $59.95)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | **8** | 9 | 10 |

This game lost one point for originality and another for not having more items to collect and use along the way. It could do with some treasure hunt-style puzzles and weapons upgrades. Escape From Monster Manor falls just short of spectacular.

Crystal Caliburn

By Bob LeVitus

It's hard to believe that Crystal Caliburn never existed as a real pinball machine because it's one of the best pinball simulations ever brought to the Mac. Of course, not being encumbered with a real prototype gave the developers complete flexibility in its design. The result is totally faithful to the pinball machine metaphor in every detail—you even have to insert a coin (by pressing Command-I or choosing Insert Coin from the Operation menu) for each player.

Game play is simple. The Shift key controls the plunger and launches the ball into the playing field, the left and right flippers are controlled by the Z and ? keys, respectively, and the spacebar "nudges" the table to affect the ball in play. Be careful— nudge too much, and you'll tilt, losing the ball in play and any bonus points you've gathered, just like on a real pinball machine.

There are dozens of ways to rack up points—ramps, underground lanes, spot targets, ball pockets, and a QuickMove feature that gives extra points for hitting lit targets quickly. For those who get good at it, StarPlay Productions, the game's publisher, is sponsoring a monthly HighScore contest. Crystal Caliburn has a built-in score authentication feature so you can send your highest score to StarPlay and perhaps win a T-shirt. Don't get your hopes up, though—scores in excess of 200,000,000 are not uncommon among true CC addicts.

The software is lightly copy protected: If you copy it from the disk it was originally installed on or move your hard disk to a different computer, it refuses to run.

Crystal Caliburn is the latest and greatest pinball simulation from Japanese Über-developers Little Wing. If you're a pinball machine fan, or if you enjoyed either of Little Wing's earlier pinball simulations, Crystal Caliburn is just what the doctor ordered. (StarPlay Productions; 800-203-2503; Mac, $59.95)

GAME-WINNING TIPS

Learn to control the ball by catching it on your flippers then aiming carefully at whatever target will currently gain you the most points.

Don't flip both flippers at the same time—you leave a larger hole between them and lose the ball more often.

MultiBattle is a great way to score a lot of points very quickly. MultiBattle starts when you lock three balls in the three pockets—Top Lock, Dragon Cave, and Merlin Hole. You must first light the Lock Enable lights by completing the Devil Dragon Spot Target Bank.

Keep your shields enabled by passing the ball through the left and right Return lanes.

The Get Extra Ball light goes on after all the Spot Target Features have been lit. So keep shooting at the two Spot Target banks, and you'll have lots of chances to get extra balls.

MultiBattle, with multiple balls in play simultaneously, is a great way to achieve a high score.

1	2	3	4	5	6	7	8	9	10

Crystal Caliburn is simply the best, most realistic, most challenging pinball simulation for the Macintosh yet.

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SEGA

Rated by V.R.C.™
GA
Appropriate for all audiences.
General Audiences

BRAIN DRAIN

Twisted: The Game Show

By Rick Raymo

Supermarket High-Rise is a memory test-based challenge.

Mix two parts Pee Wee's Playhouse with two parts cheesy game show, stir in one part Elvis impersonator and a dash of Second City Television, and you've got Twisted: The Game Show for 3DO from Electronic Arts.

This two-, three-, or four-player disc brings a pleasantly interactive (if somewhat warped) game show into your home. Choose from six possible wacky contestants like Uncle Fez (who looks like a Pez container with a Shriner's hat) and Madame Elaine (an internationally unknown psychic), and try to win them a trip back to the other side of the television screen.

During the game, hosted by Twink Fizzdale, you travel up a 90-space twisted-helix board. Landing on a red square, the Bozo Square, loses a turn. Green is roll again. Purple sends you to the Wheel of Torture (funny concept, but wasn't there a game in Eric The Unready from Legend named Wheel of Torture?). Your contestant is trapped on the spinning Wheel until you match three items in a top window. Miss, and they spin until your next turn.

Touching down on a yellow space makes you Meet the Matrix. These challenge squares have you and another contestant choose a row and a column. The intersecting square either sends you to one of eight

The twisted-helix board takes you on an interactive path.

types of challenge rounds or offers one of three surprises (like being bombed into oblivion). Among the challenges are Triple Threat Trivia, where you answer trivia questions from six categories. The trivia section has adjustable difficulty levels for each contestant, so that even expert trivia freaks can play against children. The other seven challenge areas (with names like Sound Bites, Twin Peeks, Face-Lift Salon, and Zapper) get easier or tougher depending on your performance in each round.

Between rounds you watch bizarre commercials for products like Stud Finder, with the volume properly ramped just like on real TV. The first player to reach the top sends your contestant through the screen, back to reality.

You'll find this game exactly as advertised: It is a truly twisted game show. As a multiplayer title for adults and children alike, it's the first of its kind for the 3DO. On the plus side, the sound effects and music mesh well with the theme. The live actors are funny, although a bit grating after a while. The game is colorful, varied, and adjustable enough to fit many talent levels. But you'll find that using a single controller with up to four humans gets annoying quickly. A more serious problem is that after you've played a couple of times you may find that the game lacks legs in the replay area. (Electronic Arts; 800-245-4525; 3DO, $59.95)

GAME-WINNING TIPS

When choosing columns for another player, you can often choose one with two bombs and increase their chance of bombing.

If you are behind, choose a column or row with the Switcheroo symbol and hope to switch places with the leader.
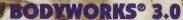
There's a bell that sounds to give you a button-press cue in Wheel of Torture if you've been there a while.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

A good game overall, with a warped sense of humor. Twisted is by no means riveting, but manages its task well.

Police Quest: Open Season

By George Fontaine

PC games can't yet convey the smell of half-dried blood on asphalt or the cold damp of a morgue. But Sierra captures the intensity of a murder investigation in Police Quest: Open Season.

Sierra enlisted former Los Angeles police chief Daryl Gates as a technical advisor. But you're on your own as Detective John Carey of the LAPD, Major Crimes Division. Your assignment is a series of murders in

then click on the person or object you want to act upon. If you've used a paint program, you'll have no trouble interacting with this game.

The background scenes are digital photographs of LA locations, including

Somebody's been bumped off and dumped in an alley. You itch to hunt down the killer.

South Central LA. The first victim is a police officer who just happens to have been your friend and ex-partner. The second victim is a young boy whose body is found near your buddy.

The plot twists and turns over the next several days as you discover links between the two deaths. You're responsible for gathering evidence, interviewing witnesses, following leads, and even smoothing out media relations. If you follow LAPD procedure and make the right decisions, you catch the culprit. But make one mistake, and it's curtains.
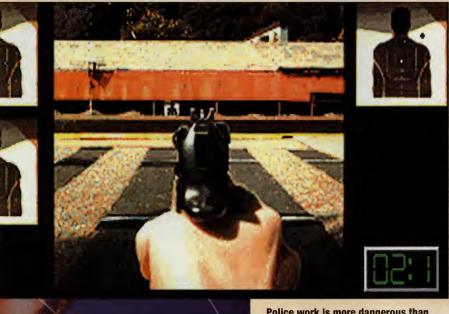
A word of caution to those with young children: Some pictures are gruesomely detailed. This story is aimed at a mature audience.
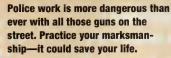
The point-and-click interface is superb. You choose an icon from the bottom of the screen,

GAME-WINNING TIPS

Show your badge when you talk to anyone.

Record everything in your notebook.

Follow departmental procedures to the letter.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | **8** | 9 | 10 |

Though Sierra's graphics and interface are predictably excellent, the procedural requirements of the game bog down play.

Police work is more dangerous than ever with all those guns on the street. Practice your marksmanship—it could save your life.

It's a bloody job, but somebody's got to do it.

police work figures significantly in this simulation. One clerical error can bring the story to an abrupt halt. And some of the attempts at humor are lame, if realistic. Players who want to experience the paperwork and chitchat that real police officers contend with will certainly get their fill.

But overall, PQ is entertaining and challenging. If you've enjoyed other Sierra adventures, you won't be disappointed in this release. Though it's the most realistic police simulation yet, it still falls short of what true police work is really like. I would know. I'm a Lieutenant with the Maui, Hawaii police force. (Sierra Online; 800-757-7707; CD for DOS/ Windows, $69.95)

inside and outside views of Parker Center (police headquarters), City Hall, the morgue, the police academy, and South Central LA. (The actors, however, saw only Sierra's Oakhurst studio.) The South Central backdrop is especially evocative, as are the expressions and movements of the characters you meet there.

Unfortunately, the procedural aspect of

Daemonsgate

By Peter Olafson

The makers of Daemonsgate boast that this game offers 150 hours of game play. Considering the immensity of the fantasy world it lures you into, that may not be mere hype.

The curtain rises on an offer of help. Take it. You need all the friends you can get.

The setting for Daemonsgate is Tormis, a great river city beset by demons, and you are Captain Custavus of the Imperial Tormishan Guard. Your job is to scour Tormis for up to seven companions, design an escape to the wider world, and eventually root out the demon dilemma. If you die in the attempt, Tormis is in for a demon free-for-all.

Daemonsgate's look isn't all that different from what you've seen in other role-playing games. It's a sort of medium-rent Ultima VI. In settlements, the party is represented onscreen by a single, thinly animated character, seen as though from a steeple. In the wilderness, the character is replaced by a shield, and the view becomes quasi-orbital. The band treks about talking to people, performing tasks, improving its party members' distinctive skills, and, of course, fighting.

The fighting is a silly business with Lemming-sized figures in Grecian helmets attacking each other in standardized playfields, but it also serves as an example of what I like about this game. Combat happens when it needs to—when you step on the wrong toes, for instance—and not as some witless generalized tool for character improvement. There's no extra credit for killing aside from the resultant booty.

While in camp, party members improve themselves through practicing skills or by instruction from another member who's mastered the skill; this is a distinct nod in the direction of Darklands. And while there's magic, it isn't the ballistic missile it's sometimes been in other games.

Daemonsgate apparently aims to be cheerfully high on fun and free of work. And in that, it is largely successful. For example, it has the most effective note-taking mechanism I've seen in a computer game. The program keeps track of every significant "keyword" or phrase you encounter in conversation, categorizes them (according to people, places, objects and miscellaneous), and stores them in alphabetical order for use in conversations or for reference at your clicking pleasure.

In other ways, Daemonsgate is not quite up to spec. You should be able to master an inventory system at a glance, and I found this one more bewildering than intuitive. The game's pulldown menus are awkward to use, and the Alt–function key combos aren't much better.

The artwork, while rendered in VGA, is rather uninspired. The buildings, parks, marketplaces, sewers, and city walls have an assembly-line quality, with only occasional text descriptions to break the monotony. Cosmetic carps? Sure, but cosmetics play into atmosphere, whether you like it or not, and Daemonsgate's graphics have a generic, quick-hit aura that works against it.

To be fair, the character portraits, which look like retouched photographs, give the game a personal touch that nicely complements the heady dose of realism in the game play. That realism will lure you into Daemonsgate, and it will make you stay. (Electronic Innovative Design; 615-824-1960; CD for DOS/DOS, $49.95)

A passage reached from the cellar of the Thieves Guild is central to your first important quest.

1	2	3	4	5	6	7	8	9	10

The game design is original, but the somewhat out-of-date graphics lower the score. A die-hard RPG lover would probably give it a higher score.

Jurassic Park

By Christopher Lindquist

Jurassic Park's first-person play is impressive, but the 3-D segments are few and far between.

All the software developers trying to cash in on the spectacular effects of Steven Spielberg's *Jurassic Park* are clearly playing for high stakes. Unfortunately, all Ocean of America has is a pair of eights and a good bluff.

You're Dr. Alan Grant, and the day is going badly. A greedy computer programmer has shut down Jurassic Park's security systems, allowing the park's reptilian residents to wander freely in search of food: plants, each other—or you.

The follow-through on this premise is weak. Pay little attention to those pictures of Grant face to face with a velociraptor. It takes hours before you get anything more than a bird's-eye view of the park's exterior.

The game field consists of the paddocks that the dinosaurs have broken free of as well as a few interior sections where the 3-D action takes place. Each paddock contains several sublevels with puzzles that you must solve to progress.

Adventure games can keep us interested in two ways: They can pose plenty of brain teasers or keep pouring on the action. Jurassic Park doesn't succeed at either. The puzzles depend more on tiresome "leave no stone unturned" scavenger hunts than on any real mind bending. And the combat portion is disappointingly tame. Shoot a dinosaur in the overhead sections, and it simply falls over and fades off the screen.

The action improves once you make it to one of the interior sections of the park. That's when you confront the vicious velociraptors. The graphics include cool features such as light-based depth cueing—'raptors off in the distance are shadowed and hard to see, but they come into sharper view as you draw near. Alas, the interior sections are all too brief, and you're soon tossed back into the brightly lit and dimly conceived park exterior.

Whoops! You're a tidbit for a tyrannosaur.

The inconsistent game play could possibly be forgiven if not for Ocean's biggest omission—a way to save a game in progress. Ocean attempts to compensate with a password scheme: When you complete a level, you get a password that you can type in later to start play at the next level. That's fine for Lemmings but totally inappropriate for a game like Jurassic Park. If you die without finding all the pieces in one of the puzzles, you're thrown back at the start of the sublevel. Perish three times before completing all the sublevels, and it's all the way back to the beginning of the game.

Jurassic Park for the PC is sometimes boring and often frustrating. So if you're looking for some real entertainment, save yourself some money. Rent the movie and watch it while you're playing Doom. You'll have a lot more fun. (Ocean of America; 408-954-0202; DOS, $49.95)

GAME-WINNING TIPS

Forget the rifle when you're outside. It has good range, but you can sweep the tazer to fend off dinos or, strangely enough, to move items such as boxes.

Walk over anything—berries, bloodstains, whatever. It's the only way to find anything useful.

T. Rex prefers his meat raw.

1	2	3	4	**5**	6	7	8	9	10

It's not the movie. With little spark or excitement and a poor interface, this one's positively prehistoric.

C.I.T.Y. 2000–London

By Rick Barba

That roar you hear is Ian Fleming turning in his grave. Here comes another game featuring a superspy duty bound to save the day and the city of London. But while the premise of C.I.T.Y. 2000 from Aditus isn't particularly original, the gimmick of solving a mystery against a backdrop of some 1,600 digitized photos of London might be enough to lure you into the story.

A drug lord named Rooter threatens to seize control of London. His weapon is a lethal narcotic produced in his laboratory somewhere in the city. The British Secret Service has failed to stop him, and now only superspy Jon Daring (that's you) can wipe him out.

The game opens with a note from your contact, Agent X, asking you to meet for dinner. From

More than 1,600 digitized photos of London make your journey through city streets a tourist's dream.

C.I.T.Y 2000's full-motion video sequences include this ride on the London tube in which Jon Daring stands there and nothing happens. Wow!

there you're sent off to a rendezvous at Madame Tussaud's wax museum. You search out your contact amid eerily exact likenesses of Charlie Chaplin, Alfred Hitchcock, the Beatles, Lady Di, and dozens more.

Whether you've been to London or not, it's fun to cruise around like this. The cheap, touristy photography is fine if you just want to stroll and see the sights—it conveys a "you are there" feeling more than animated illustrations ever could.

It's a real mood killer, though, if you prefer a little atmosphere in your gaming experience. Dank, dark London is made for mystery, intrigue, murder, and mayhem. All that stuff happens in

this game, but unfortunately, every photo seems to have been shot at high noon on a sunny day. No funereal fog, no night, no dark corners or gleaming wet streets—not a hint of menace.

It doesn't help that the live acting and voice work are painfully amateurish—you keep hoping interactive gaming will rise above this level someday. Did the Aditus staff round up their neighbors for this thing? Have they ever heard of the Screen Actors' Guild? Auditions?

Jon Daring's portrayal is particularly poor. He's supposedly "a top American secret agent," yet he struggles with the English language. Unfortunately, the bad acting goes far beyond questionable accents.

Though the acting only gets worse as the mystery unravels, the game play isn't half bad. And it's hard to complain when you can sample the sights of Buckingham Palace, Covent Garden, and Hyde Park while sitting at your desk on a dreary midwinter day. (Aditus, 514-737-8547; CD-ROM for DOS, $59.95)

1	2	3	4	5	6	7	8	9	10

Although the game play isn't bad, the acting is. And all that digital photographic data misfires— it's more touristy than atmospheric.

Companions of Xanth

By Peter Olafson

The star of Companions of Xanth is its interface. But that's not a recommendation of the game.

Based on Piers Anthony's *Demons Don't Dream* (a paperback copy is included in the box), the game casts you as a teenager named Dug. An enterprising friend—he wants to go out with your ex-girlfriend—has enticed you into playing a computer game on a bet. Boot this computer up, and you're transported to a magical land whose residents call our world Mundania and see you as a monitor screen. As you learn, appearances here are sometimes conditional upon belief.

The interface of this text-and-graphics adventure from Legend knows no peer. Gone are the intimidating word lists used in Spellcasting 101 through Gateway II; they've been reduced to seven common verbs. There's still no

This little twerp answers questions about Xanth at the game's outset and sets you up with a companion.

Have a chat with the Headman and find a key to the gate.

need to type—you click directly on objects, in either the play field or the graphic inventory at the bottom of the screen—and more often than not the correct verb's inserted for you.

And there's lots of guidance. The compass tells you in what directions you can venture, an undo icon lets you cancel any really stupid moves, and online help is easy to access. Specific hints come from a guide who accompanies you through most of the game.

Xanth's 256-color artwork is consistently pleasant. The game is occasionally humorous, and the puzzles range from logical to quite clever. The game-within-a-game elements aren't new, but

they're also not overbearing. The presence within Xanth of a second Mundane and companion competing for the same prize had at least the potential to lend the game a sense of urgency.

That's not the only lost opportunity. You can tell why Dug loathes computer games by the first sequence alone. The technique of introducing, at some length, four potential companions, and then finding that only one can actually see you through the game, is annoying. Why not use this feature to make the game replayable and allow each character to steer you through the game in a different way?

Another turn-off is the almost antiseptic and institutional squareness about this world. Xanth is so squeaky clean and orderly it makes you want to go outside and roll in the mud. This reaction, no doubt, is a product of the game's fairy-tale sweetness and the absence of any real atmosphere— something that Legend's Gateway games provide in spades.

It's ultimately the magical land of Xanth that seems mundane here. And the real world that Dug came from, with its betrayals and rainstorms and questionable telephone manners, doesn't seem so bad at all. (Legend Entertainment; (800) 658-8891, DOS, $59.95)

1	2	3	4	5	6	7	8	9	10

Xanth is an interface in search of a compelling game. Many elements in Xanth are well done, but the final product will rot your teeth before it sticks to your ribs.

Quest for Glory 4: Shadows of Darkness

By Barry Brenesal

Get out your sword, picklock, magic wand, and hero's correspondence kit. In part four of the Sierra's Quest for Glory adventure, you need your fantasy tools.

Each installment in the series takes your hero to a different fantasy locale. Shadows of Darkness transports you to Mordavia, somewhere in a mythical Eastern Europe. Your hero didn't select this destination. With its unfriendly locals, zombie-infested marshlands, vampire castle, and mad monks performing unspeakable rites, Mordavia isn't the kind of place anyone would choose for a vacation.

Not that the graphics and background visuals are anything short of excellent. In fact, the graphics provide one notable improvement over previous releases. Chat up a Mordavian local, and you get a 256-color image of your new acquaintance.

As in other Quest for Glory episodes, you can play as a warrior, thief, or magician, with a different outcome for each character. As you go through the game, more than a dozen personal statistics help define your character further.

Shadows of Darkness takes this ability to customize another confident stride forward. Do you relish action adventures like Prince of Persia, with heroes who jump, slash, duck, and parry? Or are you a puzzle veteran from The Island of Dr. Brain who freezes when confronted with a toothy dragon? Name your game preferences; Shadows will oblige. Game controls let you determine the difficulty level and the number of conversational hints. You can also order the game to handle all defensive fighting and spell casting, and leave the really aggressive stuff to your joystick or mouse. Just set it on Full Battle-Automatic, kick back, listen to the hard-rock accompaniment, and watch the well-animated opponents duke it out.

These options are more than welcome—they're necessary. Shadows of Darkness features far more powerful and numerous monsters than previous Quests have deployed. The puzzles have also increased in number and complexity. Adventuring in Mordavia is a high-risk affair. An auto-save feature at the game's most perilous moments helps, but don't rely on it too heavily.

In other ways, Shadows of Darkness is more conventional. Like most graphical adventures, it's resolutely linear. The puzzles hardly overlap at all. But the visuals, humor, battle scenes, and customizability more than compensate. This adventure should please Quest for Glory fans to no end. (Sierra Online; 800-757-7707; DOS, Windows, $69.95)

No, you don't need your eyes checked. This is the topsy-turvy world you must negotiate in Shadows of Darkness.

Be prepared to defend yourself against the monsters that lurk in the Mordavian woods.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Shadows of Darkness contains the usual high-quality Sierra visuals and humor. Still, the story drags at times.

Simon the Sorcerer

By Al Giovetti

The inventory postcard, decorated with Kilroy, is a model of under-stated British humor.

One sneeze from this guy, and you're toast!

Wishes do come true, especially in graphical adventure games. The birthday wish of Simon, a 12-year-old British lad, is granted when he mysteriously receives a scruffy dog for his birthday. With the dog comes a magic book that transports Simon into a strange new world.

The new world called Calypso is threatened by the powerful evil of Sordid the wizard. Simon, really just a simple kid with an attitude, must solve many diabolically clever puzzles if he is to help save planet Calypso. Simon the Sorcerer, from Activision-Infocom, is a long and detailed role-playing/puzzle game with more than 100 background screens and a dash of sophomoric humor.

The cruelly illogical puzzles require strings of barely unrelated tasks. One sequence has you dethorn a barbarian, whistle over a bridge, pig through a truffle door, wax a bartender out of beer, trade beer to dwarves for a gem, and sell the gem for coins. The lack of chapters in this convoluted story compounds the problem. The clue book is recommended for the easily frustrated. So is the save feature.

The game's easy-to-use interface is built on 12 text icon commands in one corner of the screen. Simon's inventory can hold an infinite number of imaginative and varied items. A postcard map serves as a limited intelligence auto-map which also lets you travel effortlessly from one destination to another. Once you have visited certain destinations, they appear on the map, and you can return to them later by selecting them. Unfortunately, the number of destinations that appear on the map is far too low for a game of this size.

The background and animation art is cartoon-like but rich in texture, depth, color, and attitude. Leave Simon alone too long, and he tunes into his Walkman. As for sound effects and electronic music, you're not driven to the mute button. The sound is basically unobtrusive, but you're quite aware of musical cues in the story.

You can adjust text speed, although the default is just fine. The lack of adequate hotkey equivalents to mouse commands is a serious design flaw.

With its adolescent humor, absorbing story, and well-developed characters, Simon the Sorcerer is a thoroughly engaging game. If we're lucky, this won't be the last game from namesake and creator Simon Woodroffe. (Activision-Infocom; 800-477-3650; DOS, $49.95)
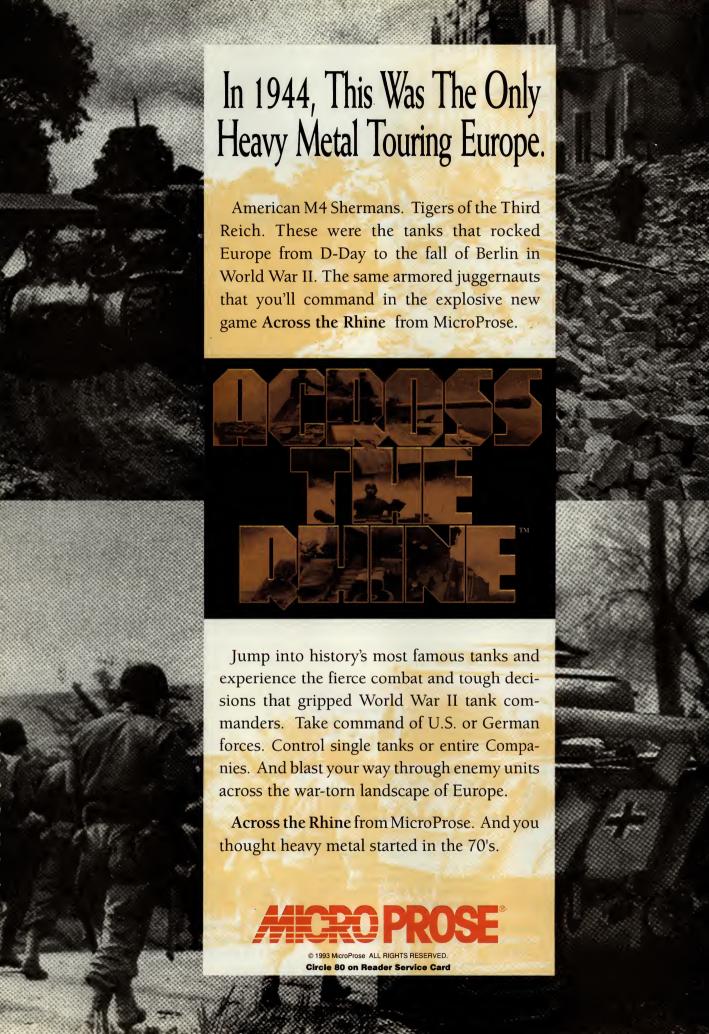
GAME-WINNING TIPS

Get the enchanted pig from the tower to eat through the truffle door, and retrieve the bee keeper's hat and smoker. Stun the bees with the smoker, lit with the Drunken Druid matches, and take the wax. Use the wax to plug up the Drunken Druid beer barrel spigot, when you ask the bartender for a drink, to get a barrel of beer and a beer voucher.

Use the rock with the blacksmith's anvil to reveal fossil. Throw the fossil to Dr. Jones and tell him you found it near where you left the detector, in the snow-covered mountains over the location of the Milrith Ore. Look carefully near Jones's new excavation for the ore to give to the Blacksmith.

After crossing the puddle with the match and two-leaf boat by turning on the newly oiled faucet, pick up the tadpole and threaten him while talking to the frog. Then the mushrooms will return to normal size.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | **8** | 9 | 10 |

Simon the Sorcerer combines humor, challenge, and a sensible interface. It's a solid if not groundbreaking game.

Conspiracy

By Barry Brenesal

Corruption has gone ballistic in the Soviet Union as the old Communist regime crumbles away. An evil power backed by massive financial support threatens to prevent the new free Russia from emerging. Welcome to the real world, 1991, comrade. As newly promoted KGB Captain Maksim Rukov, your task is to go undercover and ferret out the conspiracy. You're on your own, and you suspect everyone—even your uncle, who was injured in the same terrorist trap that recently killed your parents.

In Conspiracy from Virgin Interactive Entertainment, there is one person you can trust—your ghost father, the late Colonel Mikhail Rukov, who advises you throughout the game. He's played in full-motion video clips by actor Donald Sutherland. Sutherland's Russian accent is unconvincing, but his cinematic strong suit—one-on-one sincerity—makes the relationship with you, his son, almost embarrassingly real. What could have been a flashy but disastrous piece of big-name casting worked out brilliantly: Sutherland is the best thing about this CD-ROM adventure.

Welcome to your new office at the KGB—overcrowded and understaffed.

More corruption at the KGB. You may want to toady up to the bigwigs—unless they're members of the conspiracy.

Conspiracy is populated with numerous and varied characters, all true to type. The dialog constantly ricochets between Soviet black humor, complaints, suspicion, veiled threats, and stonewalling replies. But while the story you uncover is fascinating, Conspiracy's authors might have taken advantage of the CD's storage space to create a more intricate or longer-than-average tale.

Aside from Sutherland's footage, the graphics are surprisingly disappointing for a major CD release. Smudgy visuals, lack of animation, and below-par artwork convey no sense of an alien culture. You travel immediately from active map area to active map area, missing "authentic" backdrops along the way that could make this fictionalized Moscow feel different from other adventure locations. Enclosed television footage of Gorbachev and the unfolding 1991 Soviet coup, though historically interesting, contributes nothing to the plot of the game.

On the other hand, Conspiracy's interface is good, and its few icons are well chosen. There's a a backtrack arrow that lets you withdraw recent moves and make other choices—very useful when you've been gunned down or dismissed from work. You can also rewind, examining the last half-hour's conversations and actions for clues. And like Legend products, Conspiracy lets you reduce the size of your current screen and view it next to other mapped areas.

A mixed vote, then, on Conspiracy. The developers could have done more with this CD, drawing upon all the richness and intrigue of the Soviet Union in chaos. Still, as a standard detective mystery, it won't disappoint. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, $74.99)

GAME-WINNING TIPS

Keep an eye on your interface clock—many activities in Conspiracy are time-related. Since you never know how long a trip will take until you arrive, always allow at least an hour.

You can safely figure that you're always bugged and under observation. So don't threaten civilians indiscriminately, watch what you say, and avoid drawing your weapon until absolutely necessary.

There are more conversational gambits in Conspiracy than in most adventure games, but don't let that tempt you into idle conversation. Each question consumes time, and a stupid remark may rouse suspicions.

Never trust your superiors to inform you about anything. Examine everything you find before you hand it in.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Conspiracy boasts a fairly good plot and innovative and effective use of star talent, but it's small for a CD title and less than stunning visually.

Command Adventures: Starship

By Wayne Kawamoto

It might look like a multimedia theater, but it's the Bridge over troubled waters.

Be warned: This is no Star Trek—in this universe, everyone is belligerent. You are here for one purpose only: to search and destroy.

Command Adventures: Starship is a space-exploration game featuring arcade-style battle in space and role-play-style fights on land. Although it does feature excellent 3-D renderings, first-rate sound effects, and attractive graphics, it has too many flaws to achieve warp speed.

To begin, you purchase a starship, recruit officers (science, engineering, tactical, navigation, and security), and procure your engine, shields, and weaponry (all within a limited start-up budget). You're now ready to fly by night, brawl with other ships, and ultimately conquer 50 hostile planets.

There are several modes you'll use while exploring the universe. There's the Bridge, the Navigation mode, and Tactical. There's also a Landing/Docking mode. You explore by warping to unmapped regions on a chart. Once in a sector, you maneuver your starship in the tactical arcade mode. If you happen upon an alien ship, don't bother opening a hailing channel. Reach for the weapons console and get ready to tango. The game's in-space combat action is somewhat reminiscent of Asteroids in that all the action takes place in a flat plane. However, the ship controls are different, and this part of the game is challenging and exciting.

If you defeat the other ship, you can board it and fight its crew. But in the first of the game's glitches, if you save at this point, you'll find that the ship mysteriously disappears when you attempt to return to the game. The

Starship never really takes off, but it does land on this ground-docking station.

GAME-WINNING TIPS

To avoid aggressive alien ships, make a beeline to your chosen destination.

When on the planet's surface, keep those engineers from harm so they can build the necessary isolation grid.

If you need to find a space station to resupply, switch into, then immediately back out of the interior bridge view, and return to space. You'll usually find a space station magically appears.

game really plummets to earth with some of the clumsiest ground combat I've seen since Paragon's original MegaTraveller.

You control the crew by clicking on individual characters and selecting commands: move, attack, and defend. But after each order, the game defaults to its "defend" command. As a consequence, you're forced to select the "move" command over and over and over and over. Also, when moving, the characters constantly get stuck in doorways and behind simple objects that they should go around. Even moving a single character is frustrating.

It's a bird, it's a plane! Whatever it is, your crew and enemies all look alike in this game.

During battle, your crew and the enemies are seemingly indistinguishable from each other. In addition, you are given no feedback, so you have no idea if you're hitting the enemy until he or she actually shrieks and vanishes from the screen.

Finally, to claim a planet, your engineers must build a grid by erecting machines on each of the four corners of the land map. The problem is that there's nothing in the manual that tells you when a structure is completed, and it's easy to think it's done when it's not.

Command Adventures: Starship has the potential to be a very enjoyable game, but it needs refitting, especially in its ground combat and documentation. Also, it makes you go through its copy protection every time you get killed off—another galactic pain, and completely unnecessary. (Merit Software; 800-238-4277; DOS, $69.95)

1	2	3	4	5	6	7	8	9	10

The game is dragged down by horrible ground combat, a weak manual, and several other poor design features.

Winter Olympic Games

By Andrew Miller

If you've ever wondered what it would be like to compete in the winter games, U.S. Gold's Winter Olympic Games for CD-ROM might be the next best thing to being there. Loaded with all the realism and competitive spirit of a true Olympiad, it's a must-have for any avid Olympic fan.

Winter Olympic Games features 14 different events covering 6 sports in a full or mini-Olympics. Included are 4 Alpine skiing events; the two- and four-man bobsled; the one- and two-man luge; the biathlon, the 90- and 120-meter ski jumps, and 3 speed-skating events.

The Full Olympics pits you and up to 4 of your friends against 12 to 15 of the world's top winter athletes. A Full Olympics includes the biathlon plus 4 other events, each set up under a decathlon-like format in which you're awarded placement points in each event. The athlete with the most points after all the events are completed wins. The Mini Olympics allows you to select up to 4 events. Both versions are divided into three skill levels.

U.S. Gold, a British-based company, doesn't drop you into the fray without a chance. If you're having an especially difficult time in one particular event, you can hone your skills in the practice mode.

The 3-D graphics for the individual events are uniformly superb, offering an arresting attention to detail. Unfortunately, the controls don't measure up to the graphics—they're somewhat sluggish and at times quite frustrating. The manual recommends using a joystick. Don't! The controls are nowhere near as precise as the keyboard, and in the events that require speed, you will get better results with the keyboard. Winter Olympics' sound is below average. Fortunately, its mindless, repetitive soundtrack can be turned off.

The manual itself needs plenty of work. Its bare-bones approach leaves a great deal to be desired. The best way to figure out how to play some of the events is with on-the-job-training. However, the manual does have some value since it is part of the game's copy protection. But the major problem with the game is that it takes much too long to switch between menus and events. Even on a 486, the time between events slows down the action.

The CD-ROM version features a Winter Olympics encyclopedia which contains more information than any one person should be allowed to know about the Winter Olympics. Still, for the sports historians and Olympic enthusiasts, the encyclopedia is an entertaining feature.

Overall, Winter Olympic Games looks good, is fun and challenging to play, and should make an excellent addition to any sports nut's library. (U.S. Gold, CD for DOS; price not available)

1	2	3	4	5	6	7	8	9	10

Winter Olympics gets high marks for its graphics, entertaining format, and educational encyclopedia. However, its controls, sound, and manual keep it from winning the Gold.

Network Q RAC Rally

By Wayne Kawamoto

Rally's spectacular graphics depict forests, spectators, and moving road from a first-person/driving perspective.

Through mud, rain, snow, and the dark of night, the race must go on. Accolade's Network Q RAC Rally simulates car racing in all 35 stages of the 1993 World Rally Championship. You'll slog through mud, slide through snow, and slip in rain on a long and winding road.

Rally features excellent graphics and animation, but it downshifts on the realism with watered-down race car physics. In the crowded field of driving simulators, Rally is fairly solid. But against formidable competition like IndyCar Racing and World Circuit, Rally eats dust and sucks exhaust.

Like other driving simulators, Rally offers a first-person, through-the-windshield view of the moving world. The extremely well done graphics depict forests, textured roads and sky, and smoothly scrolling terrain. The weather conditions, particularly the rain, and the nighttime driving are spectacular, and Rally offers some of the best visual effects in a driving simulator. Also, as at the real RAC Rally, daring (and foolish) spectators line the sides of the course. Graphically, the game is fantastic.

But rotate the tires to the other side and you will find that Rally's driving physics stall, making it more arcade than simulation. The car shows virtually no skidding or fishtailing on the game's slick roads. The only realistic driving is on gravel. And while an occasional bump will send you airborne, the cars handle too perfectly. After watching digitized videos of real race cars squirming in the game's introduction, I expected my car to handle much the same way.

Rally also lacks the bells and whistles of other simulations. You don't get instant replay or multiple cameras, and car customizations are limited to selecting tires. Also, since you race for time against the clock (several people can take turns and drive one at a time), the action isn't as compelling as making the inside pass and keeping contenders off your tail as in Formula One racing.

The game does offer innovative pace comments from your co-driver that tell you what to expect in the next road segment. These comments may be verbal (sound card required) or written onscreen. Overall, I found the map display more useful.

Rally's artists did their part to create a good-looking program, but the technical side just ran out of gas. (Accolade; 800-245-7744; DOS, $59.95)

Rally offers the best weather effects of any driving simulator.

Rally offers fantastic drive-by graphics, but it skimps on the technical aspects.

1	2	3	4	5	6	7	8	9	10

Despite first-rate graphics, Rally doesn't keep up with the best on the market. It will appeal to more casual driving fans and to those who want an easily accessible car simulation.

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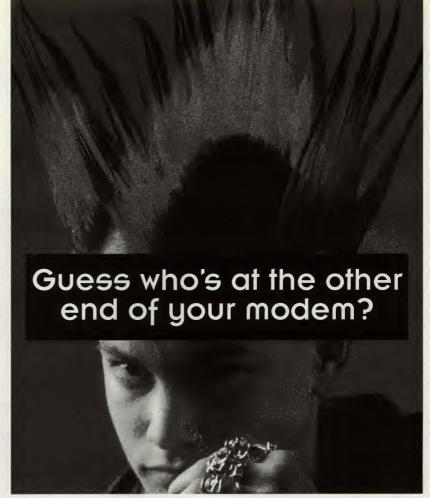
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By Christopher Lindquist

Tell It Like It Is

When someone's standing right in front of you and you want to tell him what to do, you don't write a note, you talk to him. So it makes sense that people have long wanted to control the machines sitting on their desks by speaking instead of typing. But whatever "Star Trek" may have led you to believe, speech recognition isn't easy, and it's only recently that the average computer has had the horsepower necessary to do anything useful with voice commands.

Right now, speech-recognition systems take a number of forms. You see them bundled with sound cards, as standalone products, and included in speech-enabled software packages, including entertainment products. Several recognition vendors—including Dragon Systems, IBM, Covox, Creative Technology, Multi and Verbex—have kits that let software developers build voice recognition into their games and multimedia titles. Covox and Creative also have ways to let you create your own voice commands for your favorite titles.

We've taken a close look at several speech-recognition technologies to figure out who's who, what's what, and whether any of it—for the time being, at least—is for you. All the companies in the market are frantically collaborating with hardware and software manufacturers to put their technology in tomorrow's games and multimedia titles. So don't be surprised if you see these names cropping up more often in the coming months.

Dragon Systems

Dragon is one of the pioneers in voice-recognition technology, and its high-end dictation systems have been used for years by a wide range of customers, including doctors, lawyers, and people who can't use a keyboard.

Now Dragon is making a move into the consumer market with Talk To Plus. This "voice macro" package comes with a variety of predesigned commands to control such things as Windows' File Manager and Windows Write, and you can customize it to work with just

"Look up dinosaur!"

about any Windows application or game.

Talk To Plus isn't available as a standalone package, but Dragon provides a developer's kit to software makers who want to add voice recognition to their products. Media Vision, for example, used it to develop PlanIt, a series of multimedia calendars. PlanIt users who have a sound card and a microphone can control basic commands using the voice capabilities of Talk To Plus.

There are a couple of things to note about Talk To Plus. It is a "speaker-dependent" system, meaning that users have to train it to recognize their voices. If you're going to use a lot of commands, the training process can take quite

a while. Second, Talk To Plus is a voice macro system, not a dictation system, so while you can reformat text on your word processor using voice commands, you can't dictate letters. (Dragon Systems; 800-825-5897; Windows)
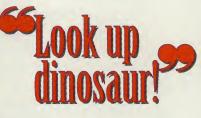
Verbex

Verbex Listen for Windows is another voice-recognition player with a history in the high-end business. The company has long provided voice-recognition technology to industrial and government users. Your mail may even get delivered to you via a Verbex system: In some cities, post office employees sort mail by reading the zip codes into a computer that then shoots the mail into the appropriate slot. What this means is that Verbex recognition systems work well in noisy environments and when people are talking quickly.

Verbex contains voice-recognition software and a coprocessor card that you must install in your PC. Because the card saves your system some sweat by doing all the recognition chores, the recognition process doesn't have to wait for your already bogged-down PC.

Listen for Windows is a more sophisticated voice-macro package than Dragon's Talk To Plus. For example, to fire four missiles in your favorite flight sim you might tell Talk To Plus to "fire missile" four times. With Listen for Windows, you could simply say, "Fire four missiles." Verbex has a very powerful capability for recognizing not only words but entire phrases that can be mixed and matched in a much more natural way.

The biggest problem for prospective Listen users is creating your own command sets (or "recognition files"). While the basic package comes with speech-interface files for several Windows applications and all the software you need to create more, you must buy a $25 manual from Verbex describing how to go about it. It isn't the easiest process in the world for an end-user, either. Verbex even recommends that you have some programming experience before you try to write your own commands.

Those who don't mind working a bit to get the most out of this slick speech technology, however, will find Listen for Windows is an A-1

system with features (and a price tag) that surpass most of its competitors. (Verbex Voice Systems; 800-275-8729; Windows, $495)

Sierra Semiconductor

Another hardware-aided recognition system is Sierra Semiconductor's Aria Listener line. Sierra makes chips for a number of sound cards, including ones from Diamond Computer Systems, Alpha Systems Labs, and Computer Peripherals. Any card that uses the Sierra chips can take advantage of the Aria Listener voice-recognition feature.

While Aria Listener isn't the most expensive system around, it's not the most robust, either. Because it understands only isolated words, speaking to Aria takes a lot more effort than speaking to Listen for Windows. And its user interface isn't as slick as Dragon's either.

However, Aria Listener *is* speaker independent, which means you don't have to train it to know your voice. This lets entertainment developers "hide" words such as passwords and puzzle answers. You won't realize they exist until you say them.

The disadvantage is a loss of accuracy. Speaker-independent systems are always susceptible to errors introduced by strange accents and unusual pronunciations. Aria solves the problem by letting you retrain words that are misinterpreted. And, as in other systems, Sierra supplies voice-macro software that lets you build your own voice commands for Windows programs.

Because Aria Listener is hardware dependent, you need to check your documentation to see if your sound card supports it. If it does, there are already games that work with Aria Listener, including Impressions Software's When Two Worlds War. (Sierra Semiconductor; 408-263-9300; Windows)

Covox

Covox claims to be the oldest voice-recognition-technology company in the world. It was founded in 1975, but the original employees had been working on military voice-recognition systems since as early as 1958.

As with Verbex's and Dragon's products, you have to teach Covox's Voice Blaster to recognize your voice by repeating all the available commands during a training session. But unlike those packages, Voice Blaster lets you add voice commands to both Windows *and* DOS applications, meaning you can add new voice commands to your DOS games. Voice Blaster is a software-only product, however, so

don't expect lightning-fast response times.

Covox is also working on dictation systems, which would let you verbally "type" letters or e-mail. But rather than doing voice typing where you see the results as you say them, Covox's product records what you say, listens to your speech file, then converts it to text overnight or while you're on your lunch break. (Covox; 503-342-1271; DOS/Windows, $119.95)

Creative Technology

The Sound Blaster folks are out to dominate speech recognition the same way they've dominated sound. Creative has inked deals with Voice Processing Corporation to produce continuous-speech voice-recognition products and with Lernout & Hauspie Speech Products to create multilingual speech-recognition tools. Creative's speech interface tools are even bundled with software development kits from Borland International.

Right now, though, Creative's entry in the voice-recognition race is fairly basic. VoiceAssist is a speaker-dependent system that lets you create voice macros under Windows, similar to Dragon's Talk To Plus and Covox's Voice Blaster. And, like those products, VoiceAssist's performance is dependent on the speed of your computer. While Creative recommends at least a 25MHz 386SX, you'll be much happier with a 386DX or 486DX system. The product also works best with Creative Labs' Sound Blaster 16 sound cards. (Creative Technology; 800-998-5227; Windows, $99)

IBM

Big Blue has developed a way to produce reliable, speaker-independent speech recognition on 486DX-based computers without anything more than a standard sound card.

The beauty of the IBM Continuous Speech Series (ICSS) software is that any one can simply walk up and start talking to it. Some of the first applications of the technology will be in Compton's NewMedia products such as the voice-enabled version of Compton's Interactive Encyclopedia. If you don't have the hardware horsepower necessary to support the speech recognition, you can just use the standard point-and-click interface. If you've got the horses, simply speak your request, and don't touch either the keyboard or the mouse.

Unless you're a developer, you won't want to buy IBM's ICSS software kit. But this software will be showing up in a number of products you will want to buy. Look for it first in arcade video games and hotels. IBM is even reported to be chatting with 3DO about a version of ICSS for 3DO multiplayers. (IBM; 800-772-2227; DOS/Windows)

If you're interested in talking to your computer, be sure to keep your expectations realistic. But the technology is advancing quickly, and it may not be long before the keyboard becomes the second-best way to communicate with your PC.

By Christopher Lindquist

The Right Connections

Why wait for the information superhighway to be built when you can find excitement right now, cruising the backroads of the online world? Services like Prodigy, America Online, the Internet, and the ImagiNation network offer games, information, and a chance to meet new people from around the globe. All you need to join the action is a computer, a phone line—and a modem.

Exactly which modem you need depends on what type of services you're going to use, how long you spend online, and how much money you have to spend. While that super-quick, pricey modem may look really cool sitting on your desk, it won't be worth the money if you're just using it to read electronic mail every once in a while. But if downloading every new shareware game that hits CompuServe is your idea of fun, that sluggish bargain you just bought could end up costing a fortune in phone bills and connection charges.

Modem Basics

Imagine two people talking on the phone. One person, the "sender," reads a typewritten note to a "receiver" who retypes the note letter for letter. When the conversation is over, both people have copies of the note, even though the receiver couldn't see the original. The sender converted the information in the note into something that could be transmitted over a phone line and be understood by the receiver.

A modem acts in much the same way: It converts a computer's digital information (which is stored as "bits") into electrical signals that can be sent along phone lines. Another modem at the other end translates the signals back into an exact copy of the original information. The conversion processes are called "modulation" and "demodulation." (The word "modem" is just shorthand for modulator/demodulator.) And you've heard the screechy language of modems if you've ever accidently called someone's modem or fax line and gotten an earfull of piercing, warbly noise.

Understand Me

Just like people, modems can only understand each other if they are using the same language. The language modems use is called a protocol, and there are a ton of them. Only a few years ago, most high-speed modem manufacturers used proprietary protocols that only worked with modems from the same manufacturer. Recent standards, however, have created common languages that most modems understand.
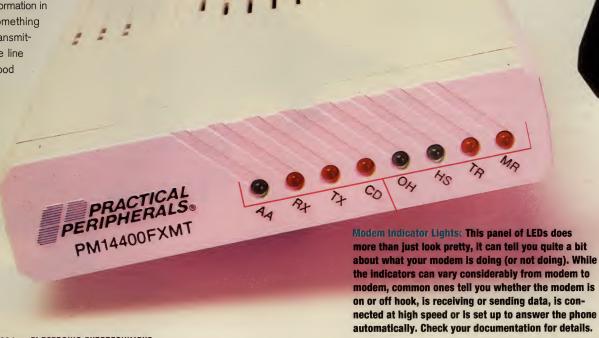
Protocols cover a variety of factors, including what conversion technique the modem uses for

sending information, what speed it operates at, and what type of data compression it uses. The group primarily responsible for setting these standards is the Comite Consultatif International de Telegraphique et Telephonique, commonly (and fortunately) known as the CCITT.

Modem manufacturers that support CCITT standards can be sure their modems will communicate as effectively as possible with modems from other makers. That doesn't prevent these manufacturers from developing their own standards, and many do. Often these proprietary standards have even higher performance than the corresponding CCITT version, but they will usually only work when communicating with another modem of the same make and model.

The rate at which a modem can transfer bits of information (its speed) is called its *throughput*. While the majority of modems sold today are 2,400-bit-per-second (bps) models, CCITT's V.32 is becoming increasingly popular. While earlier modem standards started as low as 300 bps, V.32 defined a way for modems to communicate at speeds of up to 9,600 bps. Later variations, V.32bis and V.32terbo, pushed

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Modem Indicator Lights: This panel of LEDs does more than just look pretty, it can tell you quite a bit about what your modem is doing (or not doing). While the indicators can vary considerably from modem to modem, common ones tell you whether the modem is on or off hook, is receiving or sending data, is connected at high speed or is set up to answer the phone automatically. Check your documentation for details.

that speed limit up to 14,400 bps and 19,200 bps, respectively. Theoretically, any modem that supports V.32 should be able to talk to another V.32 modem at 9,600 bps, though this doesn't always work in practice. Some modem vendors adhere to the standard more stringently than others, so problems can—and do—arise. But if you have a V.32-compliant modem from a reliable, conscientious manufacturer, you can be sure that your modem will do some fast talking with most of the other V.32 modems out there.

You may also hear about "fast class," V.fast, and V.fc modem standards. These are all names for standards based on CCITT's upcoming V.34 standard, which pumps modem speeds up as high as 28,800 bps. Unfortunately, since V.34 won't be finalized until June, modem vendors have to fill in some blanks, and the result is a "semi-proprietary" standard that may—or may not—work with other modems that claim to support it. Most of these modem vendors have promised to give users a way to upgrade their modems to the official standard once V.34 arrives.

Other standards, such as the CCITT's V.42bis and modem-maker Microcom's proprietary MNP standards, define data-compression and error-correction techniques for modems.

Compression is important because it allows more data to be sent over the phone lines in a

shorter time, giving modems an even higher potential speed. V.42bis and the various MNP standards (MNP 5 is the most common) give modems a way to "decode" compressed data that was "encoded" by the sender. Be warned that you won't see such wonderful results if you are transferring files that have already been compressed using such products as PKWare's PKZIP. Compressed files that are recompressed don't usually shrink and may even *grow* in size. So if you're sending or receiving a large number of already compressed files, it can be beneficial to turn off your modem's compression. Luckily, V.42bis can check to see if a file is already compressed and can turn itself off.

V.42bis and MNP 5 also give modems ways to correct and prevent errors that might crop up because of such common things as noisy phone lines. To use our phone conversation example again, the receiver might think he hears the letters "b - a - r - l" and realize that the word "barl" doesn't make a lot of sense. He tells the sender to stop and repeat the last few letters. This time the receiver hears it as "b - a - l - l", which is a lot more familiar. The receiver can then tell the sender that it's okay to continue.

Modems work in much the same way. The sending modem can attach error-checking information to a "packet" of data bits. This information allows the receiving modem to

check for errors. If the receiving modem sees something that looks strange, it can request that the packet be sent again.

In or Out?

External modems connect to your computer via a serial port (your computer should have two). Internal models fit into an available bus slot inside your system. Unless you really need to use both of your system's serial ports for other peripherals, go with an external model. Internal models require you to take apart your computer to install them and can be difficult to configure. And if the modem "hangs" (stops responding to your software), you may have to turn the entire system off to reset it. Externals take up a serial port and require another power outlet, but they can be reset simply by turning the power switch off and on. External modems can also be easily transported for use with other systems. Some will even run on battery power for short periods so you can use them with laptop and notebook computers when you're not near a power outlet. Those blinking lights on the front of an external modem can be useful, too. They can tell you such things as what protocols are being used, whether errors are being detected and if the modem is set to answer calls automatically. Besides, they're kind of fun to watch while you're waiting for that big download to finish.

ON POWER

RS-232C

TO LINE TO PHONE

AC Adapter Jack

RS-232 or Serial Port: This is where you connect the modem to your computer using a serial cable.

Power Switch

Line Jack: The modem gets connected to your phone line here using a standard modular phone cord. Some modems let you use the Line and Phone jacks interchangeably, but most don't.

Phone Jack: You don't lose access to your phone line when you attach a modem. A phone plugged in here will work fine as long as the modem is off-line.

Just the Fax—or Voicemail Too?

More and more modem makers are offering fax/modem combinations, often for little more than the price of a standard modem. A fax/modem is an inexpensive way of getting a fax machine for your home. A fax/modem that supports the Group III fax standard can talk to almost any other fax/modem or fax machine. Just make sure that the model you buy supports both sending *and* receiving faxes. Some only work to send faxes but won't do you any good if someone needs to reply via the same route. Also remember that any faxes you receive arrive in a format more like an electronic picture than a word processor document. If you plan on editing the text on faxes you receive, you'll need optical character recognition (OCR) software that can convert the document image into editable text. Some fax/modems come with OCR software; others require you to buy it separately.

A few companies, such as The Complete PC, Zoom, and Rockwell International, are offering fax/modems that do triple duty as telephone-answering machines. Such systems let you receive voice messages and store them as files on your computer's hard disk. While the idea is intriguing, its practical application may be limited for most people. Such a feature tends to add considerably to the modem's price, bringing 2,400 bps modems into the V.32 price range. There are other drawbacks, too. Voice files, even when compressed, can take up a lot of space on already-crowded hard disks. And even the easiest-to-use fax/modem/voicemail systems can't match an answering machine for ease of use. Also keep in mind that if the power goes out, your answering machine will reset itself when the juice returns. Computers react a little less amiably.

Softmodems

Some modem makers, such as Digicom and Cardinal, build modems that use programmable chips called digital signal processors (DSPs) to perform modem functions. Such modems use software to support such features as the V.32 standard. These software-upgradable modems (or "softmodems") can be upgraded to higher speeds, better compression, even voice, sound and fax capabilities, simply by downloading new software to the DSP.

The advantage for users, according to the manufacturers of softmodems, is that their products won't become obsolete as quickly as those that use hardware to support the standards. The competition would argue that their modems are better performers than the soft-modems and that users can often upgrade their hardware-based modems as well, though it may require replacing a chip rather than just running a software program. Softmodems are also somewhat less convenient because they require the computer to send a configuration "algorithm" to the modem before you use it.

Which is for you? If you're keen to stay on the bleeding edge of modem technology, a softmodem will help you keep up with the Joneses. Otherwise, you're better off comparing features such as price, warranty, and company reputation when making your decision.

How Much Should You Spend?

This is a question you'll have to answer yourself. Modem prices range from under $20 for the cheapest, bare-bones 2,400-bps modem to over $1,000 for a high-end supermodem. A good-quality V.32-compliant modem can be had for under $200, with bargain-basement V.32 models dipping down near the $100 mark.

Good-quality 2,400-bps modems are available for under $100 and make a good entry point for learning about online services. But you may soon find yourself feeling constrained by such a modem's relatively slow speed. If you are looking for a general-purpose modem adequate for most uses but that won't cost you a fortune, find a model that supports the V.32 and V.42bis standards. If a modem claims to be 9,600 bps or higher but doesn't specifically say it supports V.32 (or V.32bis or V.32terbo), keep looking. You may be dealing with a modem that won't connect at high speed with most other modems.

If you want a fax/modem, make sure the fax portion supports both sending *and* receiving faxes and that it works with the Group III fax standard. That way you can be sure it will communicate with just about any fax machine or fax/modem. Make sure your modem supports you system, too. Macintosh modems don't work with PCs, and vice versa. Do some shopping, too. Modems that would have cost $500 only a couple years ago are selling for $150 now, and prices are still dropping. Also be sure to check out the modem roundup in our next issue.

TechShop
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Megamachinery

When I left Sweden to move here, I sold my computer and decided to buy a mega-machine when I returned. But now I realize that it'll cost a lot of money, so to make it easier on my wallet I'll probably take a small hard disk (340MB or maybe less, God forbid) home with me instead.

My brother, who's a programmer, says that I could buy a bigger hard disk and connect it between the computer and the smaller disk, put all my serious software that needs constant attention loading or upgrading on that one, and have the smaller one for other programs, giving me around 900MB, or 1.4 to 1.8GB with a memory manager.

This sounds too good to be true. My best friend, who's a programming teacher but hasn't worked much in the field, says that it is too good to be true and advises me against it. What do you say?
Roger Isby
Hollywood, California

1.4 to 1.8 gigabytes? What in the world are you going to store on this "megamachine" of yours anyway, 112 copies of X-wing? The video history of Swedish massage? Sheesh.

Listen to your brother. As long as you make sure your system's hard drive controller supports more than one drive, you can add another larger drive later. If you get a system with a SCSI controller, you can hook up another half-dozen SCSI drives if you want to. That way you can store future massage techniques, too.

If your old hard drive is C:, the new drive will be D:. This can actually be a benefit when organizing large amounts of disk space. Drive C: could contain all your operating system files and business programs while drive D: (the bigger one) is reserved for nothing but games.

You talk about a "memory manager," but what I think you really meant was a data compressor such as Microsoft's DoubleSpace. Here I'd agree with your friend. If you already plan on having some 900MB of storage, why bother with compression? All it will do is slow down your megamachine. And if you're primarily interested in games, you'll find that data compression won't give you nearly the results you hope for. Many games use compressed files to begin with. Compressing compressed data can even, in some rare cases, result in files becoming larger rather than smaller.

My Mac Gets No Respect

Why do video game companies make games almost exclusively for the PC market? I realize that there are a lot more people who own PCs than Macintoshes. However, with the new multimedia CD-ROM games, you need a very powerful PC. The hardware requirements reduce the number of prospective buyers for these games considerably.

I own a powerful Mac, with plenty of memory and a double-speed CD-ROM drive, and I'm very disappointed by the selection of high-quality games. I have already purchased such games as Iron Helix, The Journeyman Project, and Myst, and they are excellent, but I want more. What about games like The 7th Guest, Critical Path, Indiana Jones and the Fate of Atlantis or Rebel Assault? I would purchase every one of these games if they were available for the Mac.

I want game developers to realize that they are skipping over a large percentage of the consumers. I'd never give up my Mac; but I sure find myself dreaming about what the machine could be.
Paul Carpenter
Euclid, Ohio

Wake up! Wake up! Dreaming is a dangerous pastime in this business—just ask Steve Jobs.

Things are getting somewhat better for Mac users. At least one of the titles you mentioned, Critical Path, is available for the Mac. And a bunch of creative types are beginning to develop even cooler Mac titles. (We all know right-brainers prefer Macs, right?) Check out Peter Gabriel's Explora or Total Distortion from Pop Rocket. As for most of the other PC titles, I wouldn't hold my breath. Many game makers are stretched to the limit just trying to support the glut of semi-compatible PCs out there. Asking them to support a whole new platform will probably just get you a couple chuckles if they think you're joking, or a sharp blow to the head if they take you seriously.

There is another bright spot for the Mac, though. 3DO has announced plans for "3DO on a card," which would let you run 3DO games on a Mac. If that happens, Mac users everywhere will be treated to games hot enough to make PC users strangle their mice.

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Game Over

Nolan K. Bushnell

Virtual Americans?

Welcome to Robotics Travel International, Where Thinking Is the Best Way to Travel.

Why wait for your vacation when you can see Paris right now? Hear the sounds of Rome! Smell Shanghai! Even wander the crowded streets of Cairo! And all without ever leaving the comfort of your very own couch. With RTI's fleet of tourist robots, you can forget jet lag, surly cab drivers, and language barriers. We have thousands of units located conveniently in major cities and attractions around the world. Shop, sightsee, explore to your heart's content—all for an affordable down payment and low-low monthly installments. Why wait? Dial up today!

Sure, RTI is fiction now, but a company like this could exist someday—and in the not-too-distant future. Of course, I had some very well-publicized problems with robots 10 years ago, but technology has progressed by leaps and bounds since then. And thanks to recent and upcoming advances in communication technology, it's easy to imagine an international system of linked robots that anyone will be able to access.

Now just think about it. With a two way audio-video link, you could remotely rent out a high-tech surrogate, roll it out of its kiosk anywhere in the world, and send it journeying to precisely the sites and sights you want to see. Sitting at home or in one of RTI's comfortable studios in a nearby shopping mall, you could don a visor and earphones to virtually go anywhere the robot actually goes, and see and hear anything it sees and hears. And of course, it could work the other way around, too. Speakers in the robot could let you communicate with the world around it.

I think the implications here are spellbinding. Our mythical RTI could have a credit system that would allow your robot to roll into stores and buy things using your credit card

number. The robot might even be able to inflate a plastic shell around itself, configured to match your exact body measurements. That way you could (remotely) try some thing on, and an external camera would let you see how it fit. Anything you ordered would be shipped to your door within 24 hours.

Other options might include olfactory sensors that would sample the air around the robot, with a scent generator back home to duplicate the aromas for you. In case you didn't know, the science of scent analysis is already quite advanced—most of the world's smells can be easily synthesized. Of course, you might want to disable this feature if your robot happened to be visiting Venice in August.

Smelly cities aside, though, there is a bigger problem facing the robotic travel industry. Most people will want to explore the world after work, and unfortunately, at cocktail hour in the U.S., Europe is still asleep and Asia is just waking up.

To help solve the time problem, RTI might offer a cheaper, prerecorded version of its service. For a fraction of the price of a fully interactive vacation, you could simply replay a professionally recorded trip anytime you wanted. You'd pick your destination and a general itinerary, and then sit back and enjoy the ride, without having to rent a costly robot or set up an expensive long-distance data link. Some of the flavor of the real-time experience would be lost, obviously, but the more affordable tour option would expand the market to the masses.

And later, as technology improves even

more, computer artists will be able to create whole new worlds for people to visit. They won't all have to be futuristic realms like the ones in today's virtual-reality games. They could be from any time or place. Historians will have a field day dramatizing historical events. What better way to understand American history than to check out a recreation of the constitutional convention from the seat right next to Ben Franklin?

Many years ago, the Media Lab at the Massachusetts Institute of Technology created a system along these lines. The Aspen Project was an attempt to let people electronically wander the streets of Aspen, a conveniently self-contained ski resort. The Media Lab videotaped scenes of traveli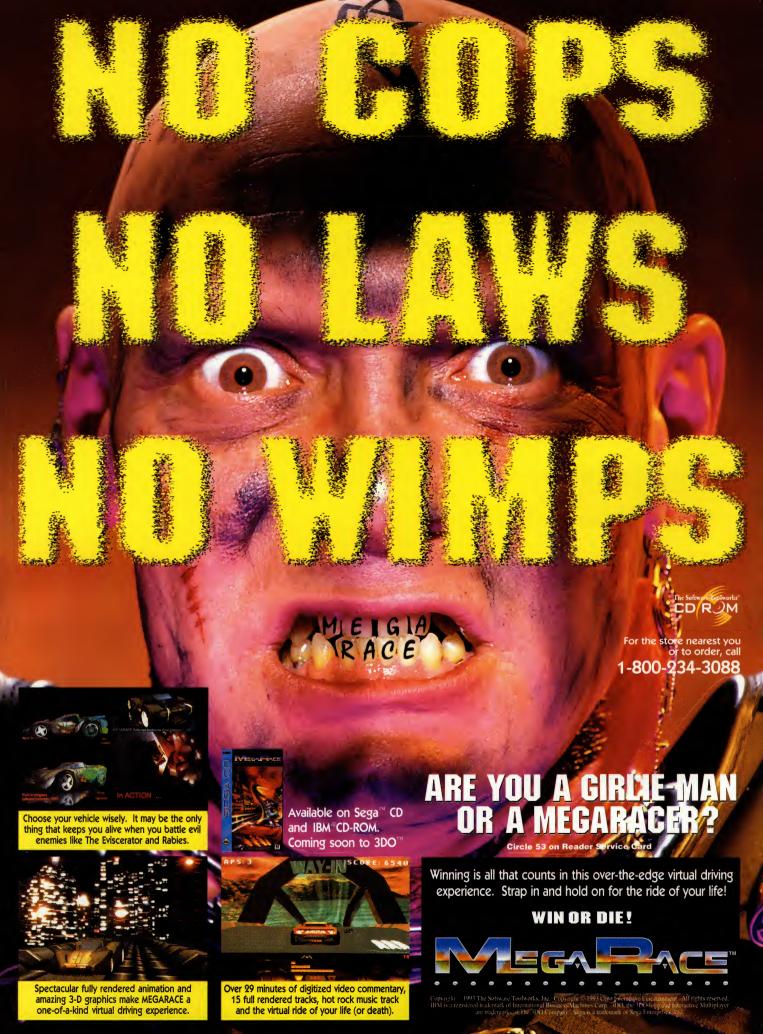ng down the middle of the town streets in both directions, then added transition footage that made it possible to smoothly turn corners. Some buildings were shot, so you could enter them, too. Then, they arranged the footage on video laser disc in such a way that you could tour the whole town. I saw the system, and the feeling was really quite remarkable.

Which makes me wonder whether having robots wandering around is such a good idea. Some purists may object to robots ruining the Roman scenery or clogging the sidewalks of Cairo. And robo-tourists would certainly bring a whole new meaning to the term "Ugly American." Think about it.

Nolan K. Bushnell invented Pong, founded Atari, and created Chuck E. Cheese. He is currently chairman of Octus, in San Diego, California, the maker of PTA software. Write him c/o Electronic Entertainment.

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